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 ABSTRACT This conference proceedings contains 65 presentations and 3 colloquiums from a conference that dealt with knowledge at work and knowledge that works and with how education can be successfully integrated into work and work into education. The papers are "Reading the Contexts of Complex Incidents of Adult Education Practice" (Apte); "Models of Work Based Learning for Undergraduates" (Armsby et al.); "Just-in-Time Training as Anticipative Action and as Inferential Understanding" (Beckett); "Learning to Compete" (Beckett et al.); "Co-Participation at Work" (Billett); "Globalization, Work, and Education" (Boland); "Work as the Curriculum" (Boud, Solomon); "Working Towards a Curriculum Framework for Work-Related Learning" (Brown); "Evaluating Organizational Change" (Butler et al.); "New Knowledge and the Construction of Vocational Education and Training (VET) Practitioners" (Chappell); "Facing Realities" (Cornford); "Subcontractors in the Australian Construction Industry" (Crowley et al.); "Learning; Design; Practice; Practitioner Perspectives of Workplace Learning" (Cys); "Learning at the Point of Production" (Daly, Mjelde); "Teaching Online" (Dewar, Whittington); "Spirituality of Work" (Dirkx); "Learning to Work" (Eames); "A Working Ethic?" (Edwards); "Transforming Management Education's Working Knowledge"

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(Elliott); "Negotiating Knowledge in the Knowledge Economy" (Farrell); "Work Knowing on the Fly" (Fenwick); "Productive Learning at Work" (FitzSimons); "Teachers Redefining Professionalism and Professional Development" (Gambell, Hunter); "Modelling the Invisible" (Gamble); "The New Capitalism" (Gee); "Conceptions of Learning" (Hager); "Recognition of Prior Learning in Higher Education" (Harris); "Promoting Knowledge Sharing in a Training and Further Education Organization" (Hill); "Incentives and Barriers to Learning in the Workplace" (Hodkinson et al.); "Reflections on Empowerment, Workplace Language and Literacy Policy, and Professional Development in England" (Holland); "Enabling Productive Learning at Work" (Holland, Leggett); "Learning Through Working" (Hopkins, Maglen); "Supervisor and Facilitation" (Hughes); "Writing-Up People at Work" (Jackson); "Whiteness as a Social Construct That Drives Continuing Education" (Johnson-Bailey, Cervero); "Knowledge Workers and the Office Economy" (Kurth); "Teaching with Global Awareness" (Lekoko); "Accrediting and Assessing Learning at Work" (Lyons); "Working Knowledge and Work-Based Learning" (McIntyre); "Working Knowledge in Management and Medicine" (Mulcahy); "Workplace Learning from a Curriculum Perspective" (Munby et al.); "The 'Good' Teacher?" (Nicoll); "Professional Identity as Learning Processes in Life Histories" (Olesen); "Local Perspectives on Globalization and Learning" (Payne); "Implementing Work-Based Learning in Higher Education" (Reeve, Gallacher); "Working Knowledge, Economic Metaphors, and the 'Cogito-Economic' Subject" (Rhodes, Garrick); "Technical and Vocational Education in China" (Rongguang); "Preparing Undereducated and Unemployed Parents for the Workplace Through Effective Family Literacy Programs in Texas" (Seaman, Seaman); "Working Knowledge of Online Learning Amongst VET Practitioners" (Schofield et al.); "Working Knowledge for New Educational Landscapes" (Seddon); "Links Between Corporate and Academic Research" (Shannon, Sekhon); "Towards a Definition of Work Based Learning" (Shaw); "Relationships Between R (Research) & D (Development) and Decision-Making in VET" (Smith); "Context Variety Means Four Stories?" (Smid); "Reflecting upon Experiences" (Staley); "Ordering the Menu" (Symes); "Critical Literacy, Cultural Inclusiveness, and Text Selection in English for Academic Purposes Courses" (Thompson); "Communicative Practices in Web-Enhanced Collaborative Learning" (Treleaven et al.); "Role of Emotion in Situated Learning and Communities of Practice" (Turnbull); "Alternative Conception of Competence" (Velde); "Learning in/Through/with Struggle" (von Kotze); "More Things Change" (Wallace); "Deschooled Learning" (Whittington, McLean); "Quality Online Participation" (Wiesenberg, Hutton); and "Emergence of New Types of Communities of Practice" (Young, Mitchell). (YLB)

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PRODUCTIVE LEARNING AT WORK

CE 081 539



**UNIVERSITY OF
TECHNOLOGY SYDNEY**

**WORKING KNOWLEDGE:
PRODUCTIVE LEARNING AT WORK**

International Conference

**Conference Proceedings
University of Technology, Sydney,
10-13 December, 2000**

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In preparing these proceedings every effort has been made to preserve the integrity of the original papers, but because of severe time constraints we were unable to attain consistency across all the papers, particularly the references, as papers were sent in a variety of formats. Reformatting of the papers was not an option as we had made a commitment to presenters that the papers would be available at the beginning of the Conference. We have not edited the papers.

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Working Knowledge: Productive Learning at Work A Welcoming Note

In the last few years knowledge has become big business. This is reflected in the recent fashion for phrases such as the 'knowledge economy', 'knowledge workers', and 'knowledge nation'. Whilst some might baulk at the use of 'knowledge' in such contexts as flying in the face of traditional understandings of knowledge, their use thus is telling and reflects a major change in corporate and organisational culture.

Our own approach to these dramatic change derives from its consequences for education, particularly post-compulsory education—which is also, in our view, undergoing a slow revolution. The elements of this revolution are driven by a globalised economy and information technology, which has become an everyday fixture in work- and education-places the world over. This has drawn schools, colleges and universities into a closer proximity to one another, and made what happens in them critical to the functions of the contemporary economy. In this context we are witnessing the ascendancy of a new form of knowledge. This is one that is high in use value and that contains a high degree of instrumentality or what we have called "working knowledge", knowledge that leads to increases in productivity and to more efficient and, potentially, more satisfying labour processes. The phrase is, of course, by no means original. Several recent books, including one to be launched at this conference, uses the title, as does *Scientific American*, which has a monthly column devoted to the subject.

Not all are happy about these developments and regard education's increasing submission to values of work as potentially Mephistolean, with long term risks for the ideals of education, particularly those relating to academic freedom. These risks are real, and unless carefully monitored could result in educational institutions being no more than the human resource development engines of post-Fordist capitalism. Our own view is that this danger is over-exaggerated and that an over-vocationalised system of education need not lead—if it is managed educationally—to academic compromises or the repression of lateral and oppositional thinking. Indeed, a closer alliance between educational and business could be a potentially a very productive one in terms leading to a fairer and more inclusive society. Too often the university has positioned itself as an ivory tower institution. Think of the way the word 'academic' carries with it pejorative overtones and the way the phrase 'real world' is often counterpoised with the world of the university—that is designated remote and out of touch. Governments in their educational policy-making education, especially higher education, have been keen to redress this, and have set education down the track of forging closer alliances with other organisations such as business. The challenge is to intervene in these processes and to develop a system of higher education in which working knowledge works to benefit not just business and industry, but also individuals and communities.

Education, for the most part, is still framed by the principles of the industrial revolution; it has yet to catch up with the information and knowledge revolution. This conference looks to the future in this respect, and presents cutting edge views of where the economy and education might be heading. It deals with knowledge at work and knowledge that works, and with how education can be successfully worked into work, and work into education.

Acknowledgements

This conference has been organised by the Research into Adult and Vocational Learning, usually known by its acronym, RAVL, and which is a Key University Research Strength at the University of Technology, Sydney. Now in the fourth year of its existence, RAVL comprises fifteen academics with disparate disciplinary interests and academic backgrounds. The first phase of its research agenda was dedicated to the theme of working knowledge, and they are now turning to that of "productive learning". More about RAVL and its activities can be ascertained from the group's website www.ravl.uts.edu.au.

Conferences are joint productions, and this was one no exception. It could not have happened without the depolyment of the energies and dedication of a number of individuals. First, there is the Organising Committee, which has met on a regular basis over the last twelve months, discussing all aspects of the conference, from the most to trivial to the most abstract and conceptual. The committee, which consisted of Clive Chappell, Paul Hager, John McIntyre, Hermine Scheeres, Nicky Solomon and Mark Tennant took on its job with good humour and rare dedication to duty. The fact that we have such an interesting of papers is in no small measure due to their efforts and support. Second, there is the staff of Governance and Management. Maureen Cleary who oversaw the organisation of the conference, and put its theory into practice, and with considerable attention to detail ensured that its material necessities were given form and action. Without Maureen's actions, the conference could not have happened. We would particularly like to acknowledge the efforts of two members of her staff Elizabeth Hardman and Enid Cross, who assisted with the preparation of the proceedings. We are also indebted to James Donleavy the designer of the web-site for the conference

The conference organisers would also like to acknowledge the following sponsors: Gleebooks who were responsible for the book display, *Studies in Continuing Education* and the Faculty of Education at the University of Technology, Sydney who provided some financial assistance for the welcome reception.

Finally, we would like to thank you, the conference participants, who have made their ways to Sydney, from many parts of the world, for what has been an historic year in the life of this city—helping to place the city at the centre of the world's sporting culture. You are testimony to the degree to which 'working knowledge' is also a global matter, of relevance to wherever systems of education and practices of pedagogy exist. We hope that this conference provides some useful working knowledge with which to develop these systems and practices; if it does this, even in a very small way, our collective tasks will have been more than worth it.

David Boud and Colin Symes,
on behalf of the Conference Organising Committee.
November 2000.

Research into Adult and Vocational Learning

Research into Adult and Vocational Learning (RAVL) is a Key University Research Strength at the University of Technology, Sydney (UTS). Our interest is contemporary trends in adult and vocational learning, particularly as it occurs in the workplace.

RAVL attempts to understand the way a more effective bridge can be built between learning and work. There are a number of reasons why this is needed.

There is now an emphasis on learning throughout life and beyond formal educational settings. The workplace has become recognised as an important site of adult learning.

Such changes raise many questions about how we are to understand learning in the workplace, and the relationship of work to formal education.

The new emphasis on work and learning poses many challenges for schools and higher education. The roles they play in preparing people for employment is being reconsidered, and they are expected to be more in tune with the demands of the workplace. Further, there is an intensive rethinking of vocational institutions.

RAVL researchers are investigating these challenges to work and learning.

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READING THE CONTEXTS OF COMPLEX INCIDENTS OF ADULT EDUCATION PRACTICE

Judi Apte, EOS Management Pty Ltd, Australia

Introduction

My primary interest in researching educational practice is to critically reflect on the implicit and explicit understandings that practitioners bring to bear on complex issues in practice. Practitioners draw upon formal and informal theories which guide practice and are developed out of their experiences of practice.

This study was located in particular ways that foreground certain issues. Firstly, the investigation was located at the interface of community work and adult education in Australia. Secondly, the study occurred during the late 1990's when within a range of organisational and group environments issues of difference, diversity of truths and negotiations about power were usually foregrounded. The broader socio-economic-political context and the more immediate organisational contexts demonstrate features of postmodernity.

Thirdly, the learning incidents selected by the educators were examples of informal and incidental learning, in which contextual issues were a primary factor for the educator to consider. The incidents that were selected also related to organisational contexts that had particular complexities.

Further, considering the style of the stories of practice that the educators related, I suggest that many features of the stories suggest that postmodern forms of storytelling are being utilised by professionals as they seek to talk about, describe and explain significant incidents. This shift to a focus on postmodernity and the implications for adult learning foregrounds the issues of transformation/formation and learning/unlearning. Postmodern contexts suggest new challenges for adult educators and the need for review of the informal and formal understandings that guide their practice. I suggest that a primary challenge is for educators to identify what understandings are useful as they negotiate across the very ambiguous and diverse terrains of their practice.

The educators that I interviewed were invited to select incidents from their practice experience that they regarded as examples of transformative learning. The incidents selected included times when a learner's professional development was linked to personal change, times of overlap between learning and societal change, times of overlap between group learning and organisational change strategies and times of overlap between the educator's own transformative learning and group learning.

The accounts related by these educators show a significant awareness of complex, competing and conflicting contextual realities. They talked of how they progressively read contextual information and then used these readings to decide on their actions within the learning group. Thus I was able to identify a range of reading strategies that were utilised and I explore ways that these educators have drawn on effective reading repertoires.

Professional knowledge as capabilities in reading complex contexts

The accounts of these education professionals confirm the view that professional knowledge (as distinct to academic knowledge) is centred on context. Each facilitator made decisions about how to act based on their reading of their contexts. In the incidents that they related, their reading of context was sophisticated, reflecting their status as experienced education facilitators.

A number of characteristics of their capacity to read education contexts were exhibited. These include the use of a range of reading strategies and effective reading repertoires.

Reading strategies

Their reading utilised a range of focuses and a range of reading approaches. Bruner notes that all readers of experience read with purpose and organisation:

readers have both a strategy and a repertoire that they bring to bear on a text (Bruner 1986:34)

Applying Bruner's idea of a reading strategy to educational practice has led me to identify a range of reading strategies. From the interviews I have identified a number of strategies, without making any claim that these form a complete map of those available. They are reading foundationally, culturally, pragmatically, critically, deconstructively, empathically, aesthetically, personally, emotionally, defensively, connectively and exploratively.

Each reading strategy is focused on an aspect or aspects of the realities being experienced and enacted. Some of these reading strategies are focused on the experience of the facilitator, or focused on the experience of the learners, or focused on the statements and actions of the learners. Some of the reading strategies are focused more on the past or the present or the future.

Reading foundationally is a reading of statements and actions of self and others with a focus on a pre-determined ideology or body of knowledge. The educator has a genuine commitment to this existing belief, philosophy or knowledge system. The central focus of the reader is "how do statements and actions within the learning group compare to these predetermined commitments?"

Reading culturally is a reading of significant meanings and expectations of cultures. The central focus of the reader is "what is expected of members of this social category?" The cultures may be the cultures of an organisation, community, family, ethnic group, professional group etc as relevant to the educational program in question. Reading culturally may include awareness of expected behaviours, values, history and practices that form the norms of that culture. A counter cultural reading posits a contrasting culture, an alternative view of expectations and assumptions.

Reading pragmatically is a reading of events and actions with primary consideration to the consequences of these events. The central focus of the reader is "what will happen if.....". The impact in the present could be read, considering the immediate consequences for the learning group's process. The impact in the future could also be part of a pragmatic reading and the impact on a range of other stakeholders could also be considered.

Reading critically is a reading with an orientation against what is being said or enacted. The reader could critically review statements and actions to identify weaknesses of understanding, communicative effectiveness, analysis and argument. The central focus of the reader is on "what are the limitations of these views or actions?"

Reading deconstructively is reading with a focus on transgressions within the text of statements, dismantling the apparent coherence and demonstrating inconsistencies. Consideration is given to the ambiguities and contradictions within statements or actions. The central focus of the reader is on "how are these actions or communications contradictory within themselves?"

Reading empathically is a reading that imagines the anticipated response of a specific audience. The central focus of the reader is on "how will they respond to this.....?" Empathic reading may focus on the group of learners in a global way or focus on one or more learners who are perceived to have a particular response. Alternatively, empathic reading may focus on relevant stakeholders outside the learning context.

Reading aesthetically is a reading that considers what gives pleasure, satisfaction and enjoyment to the reader. Reading counter aesthetically is reading with a focus on the discomfort of the reader, considering points that raise anxiety or distress or are seen as unpleasant. The primary consideration of the reader is the subjective experience of the reader themselves. The central focus of both these reading strategies is on "did I enjoy this?"

Reading personally is a reading which focuses on what resonates with my own experience. The reader considers the link between what is occurring and how that is similar or different to their own experiences of the issue. The central focus of the reader is on "how does this tally with my experience?"

Reading emotionally is a reading of the emotions that are expressed. It is a reading of truths as expressed through emotions conveyed directly or indirectly through communicative actions. The central focus of the reader is "how did we feel about this?"

Reading defensively is reading to identify an actual or potential threat. Primary consideration is given to information which has a bearing on the reader's safety and especially any actions or statements which imply that safety is at risk. The central focus of the reader is "what could this mean for me - what could I lose?"

Reading connectively is reading to connect two or more factors which are being considered separately. The interaction may have set up two items as binaries in opposition and the reader seeks to understand how they come together and interact. Alternatively a range of factors may have been raised without any effective process of synthesis, leading to a mass of unrelated pieces of information. The primary focus of the reader is on "how do these factors inform each other and come together?"

Reading exploratively is reading in order to search for something new. Consideration is given to novelty - new experiences, emerging concepts, new thoughts and new actions. The central focus of the reader is on "what might emerge from this?"

Example of a sequence of reading strategies from the case studies in the study

Sandra's case study explores a specific professional development program in workplace assessment for community arts workers. The community arts workers manage arts based projects with youth who are disenfranchised from community structures including work and education. The aim of the projects is to engage young people in learning around something which is relevant to them. For example, in one project the worker co-ordinated a group of young people in Moree who painted murals on the light poles in the town.

Sandra described the participants as 'on the fringes' in relation to workplace assessment. Over the length of the program Sandra identified a clearer picture of the impact of their educational context on the way that they approach facilitation of learning and assessment. For them to succeed in their role requires them to meet the expectations of these young people. They find that they need to take up subject positions in relation to these young people such as facilitator of project learning rather than teacher. Also the organisations that employ them and the legislative requirements that they follow are not mainstream to vocational education and training. They have quite different pressures and requirements to TAFE teachers and workplace trainers. Workplace assessment was not completely irrelevant but any relevant application to their context is marginal to the workplace learning field overall.

Well its not a requirement, its a requirement to work in a Registered Training Organisation, they are not in Registered Training Organisations, they are kind of on the fringes, but it seemed the closest qualification that could be offered for staff development.

Sandra's story of practice shows a sequence of reading strategies which progressively influenced her decisions about redesigning the program.

Reading foundationally

She commenced with a foundational reading, designing the program based on her expertise and extensive knowledge about workplace assessment.

The issue of relevance and engagement was played out in the group from the beginning. In the first session when the facilitator presented contextual information about the rationale for workplace assessment and the macro system structures and policies, the group responded with cynicism. This information provides an introduction to this program on workplace assessment and Sandra had previously found that workplace based assessors responded positively to it. When presented with Sandra's usual approach the participants' response was cynicism. From their subject position, developed in correlation with their clients, they viewed this approach as exemplifying structures and technologies of power that oppress and disenfranchise their clients. For example, they talked about the ways that assessment can be unfair.

Reading defensively

At this point her immediate concern was that the participants would reject the program and reject her and her role. She noted the risk of their disengagement if she persevered with that program design.

Reading pragmatically

She quickly moved to a pragmatic reading. Sandra was seen to be aligned with mainstream work structures from which the clients of these arts officers were disenfranchised. Where could the program proceed from here? One possibility from this point onward could have been that the group critique and reject the mainstream model. This would have constructed a narrative of the arts workers aligned with the disenfranchised youth and the facilitator aligned with mainstream work structures. The facilitator and the learning group would be disengaged unless the facilitator changed tack. Further, the clients would continue

to be constructed as disengaged from mainstream work structures because mainstream models were not appropriate.

Alternatively the participants and the facilitator faced the challenge of another option - establishing a space where they could engage with assessment and create an approach which bridged across these very different contexts. The new strategy was perceived to have risk but the greater risk was to continue with an educational process that wasn't working. The outcome of the new strategy was initially unknown.

Reading connectively

Sandra's response was to invite the group to talk with her, exploring the topic by critiquing a range of views including the first view that she had presented. This had the potential of developing a more complex story of assessment practice. In starting to develop this new narrative of assessment the pre-existing narratives of the learners and the facilitator were confirmed and critiqued and extended. The new narrative of assessment that they developed was characterised by relationships between such aspects as policy and practice and critique of existing models and design of desired models:

So their original stories were about them as isolated individuals telling the things from their personal frame of reference. That was synthesised...

Reading personally

Sandra then moved to a personal reading, reviewing again her own passions and commitments about assessment. Also, parallel with the process being negotiated within the learning group, a process of internal negotiation was occurring among different aspects of her professional self. She talked about how this incident involved her drawing on different faces of her professional self. It involved a shift among a series of polarities: from order to chaos, from the position of acknowledged expert to facilitator, from charismatic leader to follower, from working within structures to creating new structures and from her being the centre of attention to them being at the centre of attention.

Reading exploratively

She then moved to reading exploratively, identifying ideas that had the potential to engage participants in designing innovative assessment approaches.

The sequence

In Sandra's story of practice this sequence of reading strategies brought together a focus on the established knowledge base of the education field, the learner's experience of their work contexts, the facilitator's personal experience and emerging approaches in the education field. Thus the reading strategies linked existing knowledge and emerging knowledge, objective knowledge and subjective knowledge and the perspectives of the learners and the educator.

Transformative learning occurred because the current approach was found to be totally inadequate. This account of transformative learning was outlined as a contrast to her usual approach. She explained that something had to change within the learning group or the whole program wouldn't work.

What I had thought was the right way to go I knew wasn't going to work anymore and I had to do something creative or sink

Benefits and limitations of each strategy

All of these reading strategies are likely to have different benefits and limitations. Each reading strategy draws the reader's attention to an aspect of the realities being enacted.

Reading foundationally, culturally, pragmatically, critically and deconstructively often focuses on the links between the context and the area of knowledge related to the education program. Foundational and cultural readings are usually conservative in effect because they focus the reader's attention to existing understandings. Pragmatic, critical and deconstructive readings orient the reader to change as they engage the reader in questioning existing understandings.

Reading empathically, aesthetically, personally, emotionally and defensively relate to the experiences of learners and educators. They orient the reader to the experience, feelings and priorities of themselves and/or the learners. These readings are subjective in effect because they focus on responses to an issue or event.

Reading exploratively and connectively relates to features which are emerging, orienting the reader to potential developments and opportunities. This reading is creative in effect because it focuses on future developments and understandings that are not yet being expressed.

Each strategy is likely to be found to have specific benefits for the reader when confronted with a particular challenge.

Moving between different reading strategies

Mechthild Hart (1992) promotes educators' awareness of work from the perspective of connecting a number of binaries such as work and life, the view from above and the view from below and the relationship of the centre and the margin. In this way she suggests that we can "round out the picture". (1992:3) Hart develops a model of knowledge and skills based on the unity of distance and nearness, control and mimesis etc. (1992:129, 135) She illustrates the way that both mothers and artisans utilise actions which move from closeness to distance, from control to responsiveness and from particularity to generality.

Each of the educators in the study commenced their reading of a critical incident around a compelling narrative or action that was being enacted in the group. This incident sparked an initial reading which was often reactive and responsive. The incident may have called into question their pre-reading of the context, throwing doubt on their initial expectations of what would occur. The sequence of reading strategies that they used often brought them close and distant alternatively.

Reading repertoires

The experienced professionals in this study had a repertoire of reading strategies that enabled them to read complex practice incidents. They each had different repertoires but each person's repertoire included a range of complementary reading strategies. The strategies worked together and the educators seem to indicate that they have repertoires to draw upon that are usually sufficient to guide them during complex incidents.

Limited reading repertoires

The reading repertoires that I have been exploring are those of experienced educators. I am interested in considering how the reading repertoires of experienced educators might be different to those of novice educators. I suggest that their reading repertoires are less likely to provide as effective a reading of complex situations and more likely to have the risk of leading to naïve reading. Further, I suggest that naïve reading may take three forms. Naïve reading may be due to an inadequate application of a specific reading strategy, an underdeveloped repertoire or an unbalanced repertoire.

Firstly, there may be an inappropriate or inadequate application of the specific reading strategy. For example, foundational reading would be inappropriately applied if it was used to establish the educator's power to control the knowledge/s that can be expressed.

Secondly, the reader's repertoire may be underdeveloped. They may have too few reading strategies available to address complex and ambiguous realities. For example, reading culturally without being able to read critically, deconstructively and empathically may lead an educator to impose cultural values of an organisation or profession without questioning whether that would be suitable for all students in all contexts.

Thirdly, the reader's repertoire may be unbalanced and skewed. Instead of a complementary mix of reading strategies they may have many strategies that only address a narrow band of the complex realities. For example, if an educator's reading strategies only involve reading aesthetically, personally, emotionally and defensively their perspective of a situation will be skewed to the subjective experiences of participants and themselves.

The impact of organisational and community cultures should also be considered, in terms of what reading strategies are promoted and validated. An educator's limited reading repertoire may mirror and reflect a limited culture. For example, an organisational or societal culture that is dominating may validate cultural and foundational reading strategies, if they are in harmony with dominant beliefs, and resist deconstructive, counter cultural and exploratory reading strategies. Similarly dominant and limited cultures may resist

empathic reading strategies or other reading strategies that respond to the perspective of the less powerful. Working within such a culture could limit an educator's opportunity to broaden their repertoire.

Therefore any consideration of the educator's reading repertoire must consider both their own professional development and the richness of strategies that they have learned to employ and which reading strategies are welcomed or resisted within the cultural context/s.

The impact of using a new reading strategy

The incidents related in the interviews were selected as examples of transformative learning. The pivotal point for transformation was the point at which the educator decided to employ a reading strategy that was not being invited by the existing social interactions. By employing a different reading strategy they were able to notice information, knowledge or perspectives that were currently being excluded in the web of interactions.

Professional knowledge as working knowledge

The study has explored the professional knowledge of adult education professionals working at the interface of adult education and community work. It focuses on working knowledge, as Barnett outlines, "knowledge that is generated by and in the work situation".(2000:16) It is knowledge that is designed for action.

The reading strategies that were used were identified explicitly during the interviews, being implicit at the time of the incident. The incidents related in the case studies are examples of 'hot action', where the educators quickly drew upon a number of reading strategies and began to make progressive shifts to the way they interacted with the learning group and to the content of the program.

The knowledge was generated in the midst of work but articulated in the space of reflection made available in the interview. The propositions developed through the interview were expressed as tentative. This tentativeness was not because the educators were less confident of the form of knowledge that they had used but because of the space in which the knowledge was generated. Complex work contexts are not settled, the boundaries are continually in flux and the issues crystallise differently on each occasion. Educators find that their expectations need to continually move in order to respond to each new situation.

One of the challenges in communicating about the knowledge generated in these incidents of practice has been the significance of the total process rather than a particular statement or action being significant of itself. Finding a form of writing that can capture the spark of creativity embedded within a complex sequence of actions has been a major challenge of writing up the study. As Lee, Green and Brennan outline (2000:123) professional knowledge is a form of knowledge that is synoptic, focusing on a process of innovation rather than focusing on a detailed issue within an academic discipline.

This raises questions for us to consider about what are the most effective professional development processes to support practitioners developing expertise as readers of work contexts. This will require the design of professional development processes that capture and explore the synoptic view as well as the detailed reading of aspects of a complex situation.

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MODELS OF WORK BASED LEARNING FOR UNDERGRADUATES

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Introduction

The process of applying work based learning to all the undergraduate programmes in the United Kingdom can be traced from the Department of Employment initiatives of the 1980s. The joining together of the Department and with the Department for Education in 90's was a significant move which foregrounded the government's drive to include an employability element into compulsory and post compulsory education. The Dearing Report (1997) made these initiatives explicit for the university curriculum. Some of the ways Middlesex University (MU) has interpreted the current thinking in this area are seen through work based learning modules. This paper describes the ways in which, learning *in* work can be accredited through specific and/or general credit. This learning could be before the start of the student's programme of study or during it and can be awarded on the basis of projects undertaken whilst doing work. Also, learning *through* negotiated placements related to student's subject of study. Finally, learning *for* work in the form of a key skills module at level 1 introduced for almost all MU undergraduates from September 2000. It is these three ways of learning *in*, *through* and *for* work that the UK's Work Based Learning (WBL) Network describes WBL.

Negotiated placements need university placement officers and this is becoming a key role for universities. Other learning may require the co-operation of subject specialists with work based learning tutors. The operation and implementation of all these initiatives is complex and this paper begins to unravel the procedures that can make the applications possible.

In a recently published report on undergraduate work experience Harvey et al (1998) identifies twenty varieties of work experience which could be seen as relevant to undergraduate studies. Both the commissioning of the report by the Council for Industry and Higher Education and the establishment of a National Centre for Work Experience highlight the growing emphasis on learning *in*, *through* and also *for* work within mainstream, undergraduate Higher Education.

The programmes of the National Centre for Work Based Learning Partnerships (NCWBLP) at Middlesex University in Work Based Learning Studies (WBLS) have concentrated principally on developing the learning of people already in full-time work. Drawing from our work with people already in work we have developed overlapping concerns, such as employability with what has become known as the qualities of gradueness. This led to the development of processes by which undergraduates undertaking other disciplinary study at Middlesex are provided with opportunities to include learning *in*, *through* and *for* work in their programmes. It is case study examples of these students that are presented in this paper to illustrate how different models of WBL operate at MU

WBL, whether it is prior to study or during study, can be and is applied to undergraduate study. Figure 1 illustrates four areas, a, b, c and d at which work based learning can be included in an undergraduate level programme in almost any subject discipline.

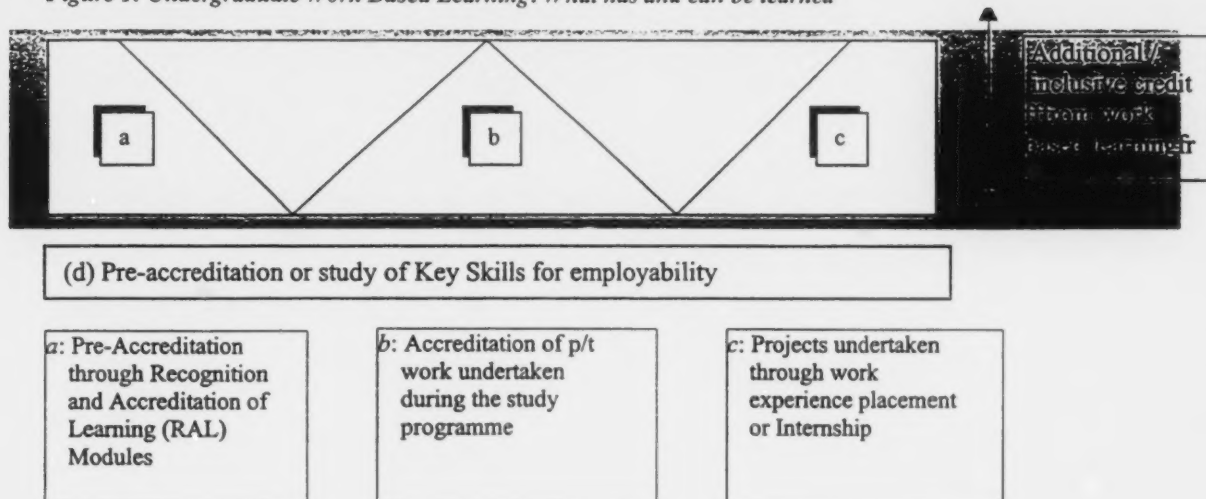
(a) Current work they are doing and work based learning prior to programme entry, included through Recognition and Accreditation of Learning (RAL) acquired *in* work, that can be accredited into specific and/or general credit.

(b) Work based learning during the programme e.g. *through* part-time or voluntary work, vacation work, accredited though RAL can be accredited into specific and/or general credit.

(c) Work based projects can be undertaken *through* project modules when students work during their programme of study and develop project work through established or negotiated work based learning as part of the programme e.g. placements or internships.

(d) The study of key skills *for* personal and professional development i.e. personal and career development, effective learning, communication, teamwork, information technology and numeracy.

Figure 1: Undergraduate Work Based Learning: What has and can be learned



Areas *b* and *c* incorporate most of Harvey's twenty varieties. However, the most significant area of development through work based learning at Middlesex has been in area *a* where students enter programmes with potentially accreditable experience which could either align with the subject discipline area of their studies or be used as general credit in a multi-disciplinary award. This significance may now be changing as other means of applying work based learning are becoming prominent.

Half of the undergraduates entering full-time programmes at Middlesex are over 21. This indicates the likelihood of experiential or work based learning which could be accredited at higher education level. The development of work based learning as a field of study at Middlesex has enabled the introduction of undergraduate modules which include the RAL process and project development in the academic framework. This chapter examines the use of these modules by students to gain credit for their work based experiences and include this in their full-time or part-time programme.

The WBLS undergraduate curriculum often starts with Recognition and Accreditation of Learning (RAL). The focus for this work in other disciplines at undergraduate level has now returned to its original starting point: a means for students to gain advanced standing on MU programmes; the difference now is that students are matching the learning outcomes of particular modules with their current work based learning as well as using certificated learning for credit.

Over the last five years the changing student profile has blurred the distinction between full-time and part-time programmes and work based learning has provided a method for these students to include other activity in their programmes and tailor their programmes even more than modularity..

Access to higher education in work based learning studies is not confined to initial access and people may use work based learning as a vehicle to develop themselves within their lifelong learning (Portwood and Costley 2000).

It is important for mature learners in work based learning that 'the disciplines' accept the academic credit they have gained through the RAL process. In WBLS we have found that people can be greatly empowered by the knowledge with which they have already been working at a higher level. The process they go through whilst undertaking the module enables them to state their experience and couch it in terms that have significance to level descriptors at the university. The process of doing this acts as an introduction and access to higher education study and learning. People learn the nature of applied knowledge, theoretical knowledge, depth of knowledge, synthesis of knowledge and so on. As they express their learning in this way, they realise that grasping concepts, reflecting on knowledge and selecting then applying knowledge appropriately are attributes they may already have. They may also realise that they have accrued a body of knowledge that may or may not fit into one particular discipline area. Some examples of undergraduate students will demonstrate the importance of the RAL process.

Specific Credit (Recognition and Accreditation of Learning)

This module is aimed at full-time first year students interested in gaining credit for current work based learning against specific modules in a Middlesex University subject based programme. It is also part of the HNC (WBS) pathway and available to students on some courses at Associate Colleges. Students will most often take this module as an elective in their first or second semester to enable them to develop a programme that incorporates credit from learning *in* work. The following examples illustrate how students have used specific credit in their programmes.

Case Study 1:

Joe: Male, aged 40+; Work Experience - 20 years as a civil servant; Magistrate.

This student made a claim in the areas of Politics, Law and Accounting. He made a claim for having specific knowledge and abilities in these areas through a portfolio prepared in the module for claiming specific credit and with the advice of the appropriate subject or module leaders. He was granted the following credit against modules in these areas:

Accounts - 1 Module at levels 1,2 & 3 (60 credits)

Law - 1 Module at levels 1 & 2 (40 credits)

Politics - 1 Module at level 3 (20 credits)

These were modules on the undergraduate programme he had selected and enabled him to reduce the length of his BA(Hons) programme to two years. His experience and the learning he was able to demonstrate from it therefore had a tangible and specific impact on his course of study.

Joe had exceptional levels of learning in several specific areas developed through work and other experience but not the broad base of subject knowledge developed through a degree. The Work Based Learning Studies module for specific credit enabled him to map his learning against modules in appropriate subject areas and include it in his qualification. The recognition and accreditation of this learning promoted a sense of his experience being valued and its inclusion in the programme enabled him to gain a tangible benefit from this through not having to study what he has already learned. The module allows flexibility as well as advanced standing within the modular framework. He was able to build on this through further study in his chosen areas of politics and history.

Case Study 2:

Lynn: Female, aged 20+; Work Experience - 3 years in Personnel and Development (Retailing).

Lynn made a claim for specific credit against a level 2 module in Human Resource Management (HRM) to enable her to progress in this area and develop a more flexible programme. The aim was to build her work experience into her programme, the process of review and reflection being used to highlight the areas of learning which coincided with the learning outcomes of a Human Resource Management module. The broad objectives of the module were, firstly, to introduce students to a broad range of alternative human resource management policies and practices, and develop their critical awareness of the internal and external factors relevant to their operations; and secondly, to provide a practical understanding of the applied functional areas of selection, training, employee relations and labour market analysis.

Lynn was able to develop a portfolio that mapped her work based learning against the learning outcomes of the HRM level 2 module and gain credit for this module. Her experience covered both objectives through her practice in the areas of selection, training and employee relations and the policy development in a large retail organisation. Through the reflection and review process she gained insight and critical awareness of broader human resource management systems. As with Joe the reflective process was guided by the WBS tutor and the mapping agreed by subject based academic staff. Lynn took the prerequisite module in Human Resource Management at level one concurrently with the RAL module for specific credit in order to progress along the HRM pathway.

Both these examples illustrate the benefits of including work based learning in a subject based programme through a separate accreditation module. Students gain specific credits towards their programme from their experience; their work based learning is accredited and thus publicly recognised; and, initially and most importantly, the students themselves recognise the value of their work based learning through the reflective process that the RAL modules demand.

Thus both students in the above case studies sought accreditation for current work based learning (section a, Figure 9.1) - in other words their programme was front-loaded with credit which gave flexibility in planning their future studies. The added value of work based learning is enhanced by the application of the learning to specific subject modules. A third case study illustrates the impact of outside professional bodies in the use of RAL in university programmes

Case Study 3:

Dale: female 40+; target an Accountancy degree

A mature female student had studied for accountancy qualifications in Sri Lanka using English as the language of study. She had then worked in Accounts for two and a half years applying her knowledge and again using the English language. The student prepared a portfolio through the RAL module that identified the certificated and uncertificated learning she had achieved in Sri Lanka. She had been in Great Britain for one year and had not worked. She wanted to study for a degree in Accountancy. Her portfolio was sent to specialist markers in the Middlesex University Business School. The portfolio was assessed as reflecting enough credits at level one to cover the amount a full time student would achieve in the first year of study. There were also a number of credits in Accountancy at level two some of which directly reflected the content of the Business School's modules. The result would indicate that the student had abilities in Accountancy that were comparable to a full time student half way through an Accountancy honours degree.

The student wanted to pursue a career in Accountancy and would therefore ultimately need recognition of her qualification from a Professional body. At this time the Accountancy Professional bodies only recognised degrees that were assessed through examination which meant that she could not take a degree in a Work Based Accountancy qualification. However she could transfer these level one and two credits (or some of them) towards an Accountancy degree, subject to academic discretion. She was unable to transfer any credit at all to any of the universities where she applied. They were willing to take her straight onto degree programmes but most said that her applied learning was not acceptable as an entry into the second year or even part of the way through the first year. It was reasoned that the first year modules contained particular information that built upwards towards the final degree. The student then wrote to the Professional Bodies with her story and received some very positive replies that stated that the Professional Bodies very much valued her work based experience and that it was in many respects more valuable than campus based learning. When the student presented this letter to the academics they accepted her into the second year (Costley, 2000).

General Credit

It has become evident that full time students claiming specific credit may also be interested in gaining general credit. At present the mechanism for obtaining general credit is located within the Work Based Learning area and is therefore somewhat detached from the subject areas from which students are seeking specific credit. This makes that process cumbersome and dependent on the student negotiating successfully with module leaders who are often unfamiliar with the accreditation process.

Some students may then opt for general credit rather than specific credit using the same portfolio process. The key difference is that specific credit must be assessed within the subject area as this is where the modules are owned against which the student wishes to claim credit. For specific credit the final arbiter on the match between the learning which the student presents and the learning outcomes of the subject modules is the module or Curriculum Leader. General credit is assessed through Work Based Learning Studies with specialist assessors used for technical or unusual areas of learning. In case studies 1 and 2 above both students also had areas of learning which fell outside the subject specific criteria and for which they claimed general credit.

This illustrates the learning *in* work which people bring is wider, perhaps covering aspect of several disparate modules and points to the interdisciplinary nature of WBL. For this reason it is far more common for learning *in* work to enable a general RAL claim. This is invariably the foundation for the WBLS undergraduate degree. Some programmes at MU will also allow some general (but subject specific) credit in their programmes.

Work Based Projects -WBLS modules at all levels

Points *b* and *c* in Figure 1 show other ways in which learning can be incorporated into a mainstream programme. Case study three demonstrates how students have used work based learning to enhance their subject based programme by undertaking work based projects.

Case Study 4:

Carmen: Female, 20+; Studying Media and Cultural Studies.

Carmen was keen to develop a practical aspect to the theory and policy which underpinned her subject studies, particularly to do with gender and media. Using work based learning modules, jointly supervised by tutors from Work Based Learning Studies and Media and Cultural Studies, she devised two separate pieces of project work with the student union. One was a joint project with another student, devising and broadcasting a series of radio programmes on the student union radio station; the second project was a critical appraisal of the (male) culture of the student union media outlets.

Both these projects were drawn from and enhanced the student's subject-based programme: the joint supervision ensured that the subject learning was supported and the distinctive work based learning project approach was maintained. The modular structure of the Middlesex framework enabled the Media and Cultural Studies subject area to guide students towards work based learning modules for this type of activity. Other students including work based activity in their programmes in this way were drawn from subject areas such as Human Resource Management, Environmental Management, Educational Studies, Psychology and Social Science. Students have used WBS modules to incorporate activity such as self-arranged placements, voluntary work, summer projects and full-time work as part of their course. Learning *through* work which uses subject specific knowledge is becoming increasingly popular. It is recognised that contextualising knowledge aids the learning process.

Students being directed towards WBS modules by other subject areas are presenting work based learning relevant to the subject area, but for which there is no (subject based) mechanism for accreditation. This highlights the argument for devolving the accreditation process to the Schools/subject areas.

The advantages of devolving the accreditation process to Schools/subject areas are also evident from an example operating in the School of Social Science. The module for specific credit is currently run by tutors on Social Work programmes. This enables mature and experienced students to include work based learning in their programme and fully engages subject tutors in the process. There is a strong element of supervised practice in these programmes and this is included as a fixed value of specific credit through the RAL process.

Figure 1 shows how accrediting specific and general credit, and work based research development projects fit into a subject based programme at points *b* and *c*. Gaining credit for these activities through work based learning modules and the Middlesex modular framework are key to enabling students to include work based learning in a full-time, undergraduate, subject based programme, giving the programme flexibility, relevance and a more individual focus.

The relevance of subject areas studied at University to work varies considerably and as we have shown learning *in* and *through* work has increased significantly in MU's curricula since the NCWBLP was founded there in 1993. Many subject areas claim that learning within them contributes to learning that is *for* work. However, employers continue to report that graduates are not ready for work. (DfEE, 2000a) Corporate Universities have developed partly to rectify this situation. (DfEE, 2000b)

It is hoped that the key skills initiative will help address this problem and almost all undergraduates from September 2000 will take a level 1, key skills module in their first year of study which they must pass before progression to the second year is granted. Each School in the University has at least one variant of the key skills module, and all must meet a generic set of learning outcomes. The range of ways that have been developed to facilitate the development of the learning outcomes for each of these key skills is enormous. Coming at the start of the individual's career as a student there is often emphasis on key skills for students rather than for employability. Some pilot courses were run during 1999/2000 helped outline general problem areas.

The focus of the WBS key skills module is on recognising strengths and weaknesses in the key skills by revisiting the range of skills used in previous experience, undertaking individualised tasks to address any areas of weakness and planning for future development. This is an independent and autonomous approach to learning which we have found is well suited to workers. WBS piloted this key skills module in the 2000 summer school and this is reported below as a class case study.

Case study 5:

Level 1 Key Skills Module Summer School Group of 16 students; all mature students already on Middlesex University undergraduate programmes

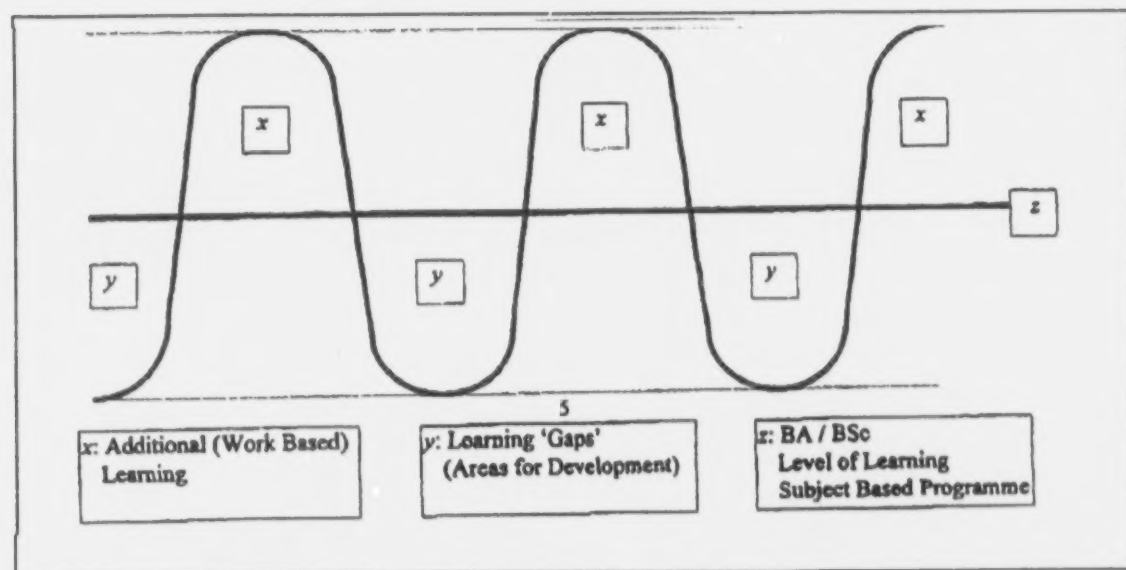
The summer school tends to attract students from across the University who need to make up a credit deficit before progressing. Consequently the pilot group were unlike the typical WBLS student who is in full-time work. Yet all of them were mature adults with experience as both a worker and an undergraduate student. This was an interesting group to pilot the module with because it enabled us to contrast students' perceived understanding of their knowledge from both a student and a worker perspective. Working with the students in workshops and individually in tutorials on the development of a key skills portfolio showed us that students found it relatively easy to relate the key skills to previous and present work experience. However, relating knowledge and skills learned within their University programme did not appear to occur naturally. For example, students needed reminding that a group presentation undertaken for a module could be used as evidence of teamwork.

Experience as a student and as a worker tended to be differentiated and it was necessary to make the connections in discussion. The two contexts of learning appeared to be perceived differently. This may link with findings that PhD students often do not recognise that the skills they have developed in undertaking their research are transferable to the workplace (Thorne, 2000). Clearly, key skills are enablers for life, whether it be as a student or a worker. It seems the pilot group did not make this link.

Profiling the Learner for success at work

Many learners already have well developed areas of work based learning in their chosen subject areas (see the areas of (x) in Figure 2). Compared to the input driven university curriculum (z) this learning can often be at a high level. However they may also have significant learning gaps or areas for development (y). This profile is determined by two key factors - the individual career path followed by the work based learner and the demands of their work area. This means that the learner develops individual areas of expertise where required, for competent performance at work (x), but may not have significant learning in other areas which are not required by their particular job but which form part of their chosen programme (y).

Figure 2: Work Based Learning - Learning Profile



Joe was interested in studying in the areas in which he had experience, particularly Politics. His knowledge profile is that of a mature work based learner and he was able to incorporate several areas of learning in a broader based programme that took account of the complementary nature of his experience. Because he was able to obtain significant credit against other modules he was able to use his work based learning to best advantage. He reduced the length of his course and focussed his work on the areas he was interested in studying.

Lynn has less, and more specific, experience. The use of specific credit enabled her to incorporate her relevant experience into the subject programme while at the same time reviewing and reflecting on the broader learning she has gained. The credit gained provides flexibility within the programme and recognition, both by the student and formally through the institution, of her work based learning. However its impact on the length and depth of her studies is much less significant than that of Joe. It did have the effect, though of introducing her to the concept of work based learning, and she incorporated some more of this in her programme at a later stage through arranging her own placement, using a work based learning project module.

Using Figure 2, it can be seen that the profile of Joe has several high peaks of work based learning (x) while that of Lynn would have one well-developed one and some lesser areas. Lynn would also show more significant learning 'gaps' or areas for development when compared with the programme she wished to complete. In contrast Joe was able to use work based learning from his broader and longer experience to fill in more of area (y) on his comparative profile.

Key skills have been incorporated into undergraduate programmes (z in figure 2) and the pilot key skills group showed learning corresponding to (x), which they had accrued as students and workers; and learning gaps corresponding to (y) which needed to be filled.

Conclusion

The use of work based learning by undergraduate students at Middlesex is expanding. An increasing number of subject areas are now more aware of the advantages it offers in recruiting mature students and in providing programmes which incorporate learning that is relevant to the students' career aspirations and more specific to their interests. The case studies demonstrate how work based learning provides students with recognition for their experience, skills in being a reflective practitioner, abilities in Project management and a programme which is flexible, relevant and more personalised. We have yet to establish the effectiveness of key skills on graduateness.

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JUST-IN-TIME TRAINING AS ANTICIPATIVE ACTION AND AS INFERENTIAL UNDERSTANDING

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1. Getting it wrong...and then right

In Geneva in April 2000, I made a presentation to an ILO Conference on lifelong learning and the education professions that included this statement:

'Just-in-time' learning, especially via very focussed 'high-tech' training packages, meets immediate workplace skill deficits, BUT because of the virtue of that immediacy, leaves untouched the acquisition of underpinning knowledge – nor provides the time to reflect on its necessity – and we expect these to help make a worker more creative. (Beckett 2000b)

I was quite severe in this view – indeed, I thought 'just-in-time' training (JiT) compromised workplace learning as such (Beckett 2000a) – but now I believe this to be basically wrong. Far from compromising workplace learning I now believe JiT can be central to it. In fact, in this paper I want to show that it is an example of a fundamentally significant way of regarding human intentionality, underpinning not only workplace learning, but indeed all learning. If I am successful in that, training could be reclaimed as the core of any educational activity.

JiT I define as the negotiated provision, in corporate workplaces, of learner-generated immediate skill formation. It is increasingly popular with managers (see *The Age* clipping to be distributed; also postgraduate class discussion Sept 2000), and has appeared in academia: I am involved in that I have a 'technology mentor', part of a scheme in the Education Faculty at Melbourne. I volunteered for this JiT scheme to upgrade my 'on-line' IT skills, and Joyce was appointed my 'mentor'. We have negotiated ten one-hour sessions at my computer to address this upgrade, and these range across September and October 2000. In other workplaces, I gather similar negotiations ensue over the topics and timing of the sessions, but that what is in common is an authentic workplace as a location, and authentic workplace learning needs as the focus of the upskilling.

I was wrong to suggest that JiT was adequately described as the remediation of 'skill deficit', redolent of behaviourist pedagogy, without opportunities for the acquisition of underpinning knowledge or reflection. It now seems to me that JiT is situated learning (even perhaps amongst a 'community of practitioners'), that it is significantly self-directed within that, and that what I have called whole-person or 'organic learning' (Beckett 1999) is readily apparent.

What then is so illuminating about JiT for human intentionality in the workplace?

The rest of this paper outlines an answer to this. Briefly, I claim that JiT is what some theorists would call a social technology (Mulcahy 1998), but which I prefer to regard as anticipative action (section 2). I then want to build on anticipative action to claim that JiT is an example of a way workers accomplish 'understanding': through practical inference, not through the representation of ideas (section 3). In the brevity of this paper, I can only sketch the barest details of this answer to the question I have set.

But first, some background, in establishing what I have called 'anticipative action' (drawing on Beckett 1996, 1999, 2000c).

2. Training as anticipative action

Training at its most behaviouristic does not require understanding, and the Gradgrindian schoolroom was little better. Acquiring a skill through replication of actions was the point of it all, with hopefully a minimal understanding turning up on the way through. We can however retrieve training as the acquisition of skills, if we move beyond replication, to anticipation.

Anticipative action arises through training when we find ourselves doing something skilful, not just with understanding, but also with confidence. First, we are able to recognise a pattern and repeat action within that pattern. In Wittgensteinian terms (1963), we are demonstrating our rule-following capabilities with respect to the matter in hand.

But, second, and also in Wittgensteinian terms, we are able to go on. We move beyond that rule-following. The confidence to 'try' is thus an emergent aspect of our actions, made apparent in our extension of the

pattern to new situations. We have made judgements to go on - the very 'doing-with-confidence' which is the enacting of the judgements. Of course the pattern we are skilled in recognising and replicating will frequently not fit the new situation. Workplace contingencies are frequently of this nature: much of what just crops up at work defies previous pattern-making, and then replicative action is an inadequate response.

Clearly, a different, richer sort of understanding is required, and I have argued that 'training' in the organic sense, is a central to this. In our skilful actions, we anticipate an outcome.

As Winch (1995) states:

There is perhaps a core usage of the term 'training' which makes it more than just a variegated family resemblance concept like 'game', while remaining a concept with blurred boundaries. This core usage is connected with the idea of learning to do something in a confident way. The emphasis is more on *action* than *knowledge* on the one hand, and, and *on an unhesitating and confident action* rather than a hesitating and diffident one on the other....It is simply to say...that training is more closely linked with the development of confident action than it is with knowledge and reflection. (321)

Winch's 'unhesitating and confident action' reflects the dynamic nature of much of the work now undertaken by, for example, managers and nurses.

Furthermore, structures have emerged which emphasise this more 'organically'-based training. Throughout many institutional and organisational settings, workers are involved in mentoring and coaching programs, project management, professional or personal competency-based appraisals or performance assessment, and so on (see Beckett 1999). As well as the technical skill formation implicit in these structures, there is an emphasis on the cognitive and the affective and the social dimensions of work life, all intertwined in real issues and challenges, and intended to bring about the acquisition of unhesitating and confident action. This 'bringing about' overtly deals in replicative skill acquisition (the technical), but in 'whole person' situations of contingencies - as marks, for example, managers' and nurses' daily work.

My argument, in retrieving training, is that, at the core of all workplace educative activities (such as mentoring, project management, and competency structures), and not beneath, or beside them, is some element of skill acquisition, logically insufficiently described as replicative actions. These skill acquisitions are typically short-term - their achievement is imminent. Just as significant, their achievement is demonstrable in more confident practices - amongst these is JiT.

JiT is embedded in quite complex workplace actions. But the actions are anticipative - they are attempts to bring about practical outcomes. However, that complexity and that practicality are both generated and required by specific workplaces. Contextuality is crucial to action.

But how do the JiT actions of individual workers relate to the means and ends of the workplace itself? As I claimed elsewhere (Beckett 1996: 148) what is required is:

...serious reconsideration of the hold that feedback, or 'means-end', judgements have on human reasoning.... can a concept of 'feedforwardness' change the nature of accomplishing, as much as 'feedback' is expected to change the nature of attempting? In a truly reflexive relationship, this should be possible.

Anticipative action is forward-looking, in an overtly creative way. Feedback mechanisms *report attempts* ('tryings'); by contrast, feedforwarding *rehearses accomplishments*. It is the reflexivity in actions between both of these which constitute practices, and which together account for both the routine and the contingent in human activity. We have noted that workplace practices are a blend of rule-following (reading the patterns) and confident extrapolation (into the new situation), and in this, both the routine and the contingent are present. However, replication and reactivity and the attempts to 'try' when faced with the contingent situation, are inadequate.

A conceptualisation of the proactivity of much work practice - including organic learning, and training - is now available once we focus on how contingent situations are handled. *Contingency is handled by, for example, managers and nurses, by feedforwarding, that is, by acting anticipatively, and thereby raising the prospect of modifying not just the practical means towards an end, but of modifying the end itself.*

This is a rich development of an Aristotelian epistemology of practice. It acknowledges, as did he, that the ends of know-how determine the status of the knowledge-claim. His *phronesis* is practical wisdom, and by

wisdom, Aristotle meant that the knowledge gets the practitioner where she wants to go (i.e. is practical) in *value-laden*, not merely technical or prudential, terms. An ethically defensible purpose is essential for *phronesis*: the value of the practice lies beyond the practice itself. But the two are reflexive. Indeed the creativity of practice - now surely a desideratum in the globalised workplace - expects this. But still the *telos* (the purpose) informs the *techne* (the skill), and the *techne* - the means - is turned to value-laden ends - the *telos*.

There is thus a reflexivity between the 'knowing how' a manager or a nurse finds themselves *drawing upon* at work (minute by minute, hour by hour), and the 'knowing why' they find themselves *drawn to* (also by the minute, or by the hour). Both the 'know how' and the 'know why' are up for constant renegotiation, as anticipatively, actions unfold - in the face of contingencies.

Anticipative actions show up in the way workers talk and think. Kenny (1989) reminds us that intentional action presupposes language of certain logical form. Both theoretical and practical reasoning are displayed in language in that in both we pass from premises to conclusions, although he notes that in practical reasoning, the logical structure of the argument is often tacit. But there is a dramatic contrast as well:

...a piece of practical reasoning must contain a premiss that sets out a goal to be achieved....The other premisses commonly set out facts about the present situation, plus information about ways of reaching the goal from that situation. Indeed, the commonest pattern of practical reasoning is this: 'G is to be brought about. But if I do B then G. So I will do B' - where 'G' sets out the goal to be achieved and 'B' describes some behaviour in my power.

This simple pattern is already enough to show that there are important formal differences between the logic of practical reasoning and the logic of theoretical reasoning. For in theoretical reasoning the argument form 'Q. If P then Q. Therefore P' is not a legitimate pattern of deduction, but a well-known form of fallacy....[This] difference is connected with the difference between the indicative and the imperative mood. The rules of theoretical reasoning are designed to ensure we do not pass from true premises to a false conclusion. They are truth-preserving rules. But the initial premiss and the final conclusion of a piece of practical reasoning are not assertions, true or false. They are rather such things as resolves...and expressions of intention, which belong to the imperative rather than the assertoric mood. What then...is the practical analogue of truth?

...if there are rules of practical logic, their function will be to see that we do not pass from a plan which is adequate to achieve our goals to one which is inadequate to achieve them. Commonly, in discussing plans, we presuppose our ability to implement them, and try to work out which, of the various plans we might implement, is most satisfactory - which will best serve our purposes and achieve our goals....we can say that the rules of practical logic are satisfactoriness-preserving. (pp43-44)

Kenny's 'satisfactoriness-preservation' is apparent in managers' and nurses' work practices, provided 'satisfactory' is equated with 'the pursuit of the good' not the mere preservation of the status quo. In pursuing the achievement of the good - what is regarded as 'satisfactory' or 'appropriate' to the situation, these workers display what I have identified as anticipative actions, requiring practical reasoning. JiT is similar to this. It requires reasoning of the logical form described by Kenny, since JiT actions - both interpersonally and involving any IT elements - express intentions to avoid '...pass[ing] from a plan, which is adequate to achieve our goals to one which is inadequate to achieve them'. On the contrary, such actions seek the satisfactory outcome - what is appropriate to the case, or situation. At an ontological level, technology 'enframes' our being, claims Heidegger (Beckett 2000d).

Yet the notion of a 'plan' for such actions is elusive (see Beckett 2000f, Beckett & Morris 2000a, 2000b for empirical evidence). This is because we are expecting to find a plan when more often than not we do not 'plan' (that is, form an intention), we act intentionally - there is an 'aboutness' or directedness about action (this is sometimes called 'Brentano's thesis'; see also Beckett 1996). The argument for JiT as anticipative action concludes that in the process of the training, including its formulation, there exists reflexivity between means and ends, and that there exists a process of negotiation and renegotiation as the routines and contingencies of the workplace unfold. This reflexivity is intentional action, a rich and hitherto ignored source of experientially-based understanding, which I will develop in the latter half of this paper.

The 'plan', in this 'acting intentionally' sense, and expressed by practical reasoning, is to preserve the quest for a satisfactory solution and re-solution of practical learning needs. Thus practical reasoning for our JiT workers is about satisfactoriness-preservation, after all.

Training, as a structure for organic learning, can provide confident skill acquisition in situations where the confidence is warranted. It is not a recipe for mindless optimism about success, a 'one size fits all' model of learning, as it was in its behaviourist past. Rather, it is a careful crafting of the situation to the outcomes, whilst encouraging the reflexivity of ends and means in the light of the confident exercise of that skill. I believe JiT schemes provide for this. They seem to be marked by negotiability of ends and means, and they assume embodied learners in real-life situations. There is often an IT component, and here one must be careful. Learning which is IT-driven (where the learner is dis-embodied – that is, alone with the computer), will produce skilled technicians, instead of reflective practitioners, but the latter require real worksites, real problems and real peers. IT components in training, such as in JiT provision, would need, on this analysis, to be subordinate to learning through social collaboration at and for the workplace, that is, from each other, face-to-face, and even, one-to-one.

3. Inferential understanding

At a more profound level of analysis, we may ask: how does JiT help us understand 'understanding' itself? If anticipative action contributes to this, it is because it takes apart intentionality, and then approaches it in a new way. First, it recognises the limitations of understanding how to go on through 'feedback' mechanisms. Even the *model* of a 'mechanism' gets in the way of understanding 'understanding'. As I stated earlier:

Feedback mechanisms *report attempts* ('tryings'); by contrast, feedforwarding *rehearses accomplishments*. It is the reflexivity in actions between both of these which constitute practices, and which together account for both the routine and the contingent in human activity.

These are the seeds of a new approach to 'understanding'. Instead of asking how the learning, through JiT, for example, is *represented* to the learner – has there been a change in the state of the learner? – the more profound question is: what *inferences* can now be articulated by the learner?

My 'feedforwarding' is a conceptually clumsy notion, as it stands, but it endeavours to focus on the proactivity and creativity of intentionality by opening a space for this 'inferential understanding'. I have argued in the previous section that practice is the rehearsal of accomplishments. Practitioners (and, I would argue, all learners who are encouraged to take their embodied action seriously), create and recreate their 'practice worlds', as Schon has famously stated. Understanding, on that basis, is an inferential phenomenon – it arises from the fluidity of rehearsals and accomplishments which constitute practice across routine and contingent situations.

Notice however that this inferential understanding is *articulated*. This is crucial. Whereas representational understanding tries to map itself in the identification of mentalistic states (such as 'mechanisms', 'ideas', 'mental models', 'learning loops', 'pictures', 'images', 'maps', 'metaphors'), inferential understanding shows up in public, socially-located, justifications. These are more or less warranted assertions of how experience is proceeding: they are the 'whyness' of practice.

This understanding of 'understanding' requires not only one embodied practitioner but a whole community of them, because the practices are, at bedrock, assertoric practices. Justifications of how one proceeded, or intends to proceed, or (more commonly) finds oneself proceeding are articulable in warranted ways depending on the values and norms of one's community. The warrant for thus-and-so proceeding as it does is embedded in the assertoric practices of which one is a member. We need not be too precious about this. There will be a range of these, all overlapping, from the community of a workplace, of a profession, of a citizenry, and even up to the general level of humanity itself. Boundary-crossing and multiple memberships of communities provide the assertoric spice to our inferences. Right across this range, then, inferential understanding, and the assertoric practices in which they are embedded, are normative. The public, socially-located articulation of justifications reveals understanding. To engage in a series of reason-giving for one's 'anticipative actions' invites other community members to join in – that is, to articulate warranted ways to go on – which co-constructs practice. Gains in, and blockages to, understanding are inferred from these practices.

It will be obvious that this analysis is Wittgensteinian, in that it fits with his constructivist 'language-game' metaphor for the meaningfulness of human actions. The metaphor, which is representational, points to his insight that our rule-governed capacities are entirely due to our socio-cultural, not our private, reality. The significance of Wittgenstein for postmodernists, amongst others, and at least in this respect, continues to be deservedly high. But this not because of the metaphor of the language-game, which is a powerful heuristic device. Rather, it is because it re-presents Wittgenstein's insight into the relationship between language and the experienced world. His argument against the possibility of a private language is central to that insight, not

the metaphor in itself. The practice of assertion is ineluctably public, he argues, ruling out (literally, not metaphorically) a private language, and therefore the cogency, in any interesting sense, of a private reality. This is a formidable assault on the Cartesian *cogito*.

But inferential understanding has many supporters in mainstream analytic philosophy. McKenzie (2000) details its rich and contemporary legacy in Western philosophy with special reference to Frege, Kant and Leibniz. I suspect Rorty, and other Deweyians would fit well with this tradition.

What is especially noteworthy for some of us in education (and what follows develops the analysis found in Beckett and Hager 2000) is the significance of *judgement*, which, as McKenzie reminds us, we can find in Kant:

The unquestioned assumption before Kant was that an explanation of linguistic meaning must begin with a theory of terms of concepts, both singular (e.g. "Socrates") and general (e.g. "human"). Their meaningfulness would be grasped independently of, and prior to, the meaningfulness of anything else. They are representations. (p4)

It was through that the combination of these linguistic atoms would produce assertions and then inferences, the truth of which was based on what was combined and how. McKenzie goes on:

For Kant, the fundamental unit of awareness or cognition is the *judgement* (assertion). "Now the only use which the understanding can make of these concepts is to judge by means of them" (Kant 1781/7...). Since this was the *only* use, it followed that "...we can reduce all acts of *understanding* to judgements..."...To understand something as a singular or general term presupposes its role in judgement. (p4) (*italics in both originals*)

Again, consider Frege (1881), the originator of Western analytic philosophy, and a substantial influence on Bertrand Russell, as quoted by McKenzie (2000: p4):

I start out from judgements and their contents, and not from concepts...And so instead of putting a judgement together out of an individual as subject and an already previously formed concept as a predicate, we do the opposite and arrive at a concept by splitting up the content of a possible judgement

In all of this, the enemy is, and ought to be, any Cartesian assumptions that understanding is represented mentalistically, that is, divorced from embodiment. But it is also unhelpful to regard understanding represented discursively (as only a linguistic phenomenon), or represented logocentrically (as only a syllogistic phenomenon). I have argued elsewhere (Beckett 1998, 2000c, 2000e) that any attempt to advance human learning should stay true to the 'whole person', and that working knowledge of various kinds can be shown to do this. Embodied actions are at the heart of inferential understanding, but as I have tried to show they do not tell the 'whole' story. What is also required is an account of intentionality which is reflexive over means and ends, and value-laden (in the form and spirit of Aristotelian *phronesis*). These two sections have outlined such an account.

4. Conclusion: Intervening intentionally

The point of all the above is to dislodge representational understanding (because these are one-dimensional and reductive aspects of experience), as such, in favour of inferential understanding (because it admits of multi-dimensional and reflexive aspects of experience).

Inferential understanding gives primacy to human judgement, and its embeddedness in warranted assertoric practices. This seems a much more fruitful approach to understanding 'understanding', which, to re-iterate, is inferred from anticipative actions (in, for example, workplaces). JiT is one specific way to winkle this out.

Attention to our interventions, that is, to specific learning processes, such as via JiT, is intended to *substantiate* (give substance to) the outcomes: the social construction of the citizen, the adult, the worker and the person is the end in view. Of course what the *substantive worth* of these constructions amounts to will vary depending on the depth and breadth of the processes experienced, and upon the context of the interventions, and its inherent value-ladenness. As McKenzie says, inferential understanding is 'normative all the way down'.

Individual identities, in these respects, will be unique, but they will flow from the inferential understandings we gain from interventions by educators and trainers – amongst many others. It is also worth noting that

socio-cultural identities will be normative 'all the way up'. The limitations of feedback ('means-ends') models of understanding in social policy settings, such as in Tony Blair's Third Way, can be engaged using similar approaches to the above (Beckett 2000e, 2001) – but really that is a story for another day.

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LEARNING TO COMPETE: POST-GRADUATE TRAINING IN AN AEROSPACE COMPANY

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Introduction

The ability of companies to survive and grow in an increasingly competitive global environment is tied to the people in the organisation. People at all levels of a firm need to be willing and able to adapt to change, and if a firm seeks to thrive on change it must invest in its people. The companies that equip their people, at all levels, with the skills needed to thrive on change will be best placed to survive and grow. To successfully develop human resources an organisation must identify the skills it needs now and in the future. These skills must enable the organisation to achieve its strategic goals. Many firms recognise the need to multiskill employees on the factory floor, and the benefits of multiskilling operational employees has long been recognised. The operational employees through their trade unions have insisted that the training they undertake should be recognised and accredited. At the managerial level much of the training has been non-accredited intensive short courses, or managers have undertaken accredited tertiary courses in their own time. If companies are prepared to invest in the development and multiskilling of their managers then it should be possible for managers to undertake relevant education in-house that meets the company's needs and provides the participants with an accredited post graduate qualification.

The paper describes some of the organisational learning needs, describes an approach taken to innovative training with a number of universities, and provides feedback from some of the participants in the process.

Integrating learning and work

The company has survived a global recession in the aerospace industry, and some specific customer price reduction initiatives over the last decade, through a succession of changes to its manufacturing operations (e.g. cellular manufacturing), and re-arrangement of its functional structure (e.g. deployment of specialists into the manufacturing operations). These changes have resulted in leaner, flatter organisational structures, but this increases the difficulty of finding time for learning through traditional practices.

The company has developed a team based approach at all levels in these flatter structures that is evolving to utilize the whole experience of all people in the organisation. In addition, specialists are being utilized differently to help people make technical and operational decisions, consistent with business needs, at the lowest possible level in the organisation. The objectives are: to get better informed decisions faster, and to free higher level people to adopt more of a strategic focus in building the company's future.

The ability to quickly adapt products or processes, to extend the boundaries of current technologies, and to adopt new technologies earlier in their life cycle is seen as a source of competitive advantage. But it is perceived that the rate of improvement may ultimately be limited by the rate at which new things can be learned. So, the concept of the "Learning Organisation" (Dodgson 1993) has some appeal, but creating an environment which values continuous organisational learning is a significant challenge. A learning organisation is "an organization which facilitates the learning of all its members and continually transforms itself" (Pedler et al. 1989). Learning in this sense is defined as a "purposive quest to retain and improve competitiveness, productivity, and innovativeness in uncertain technological and market circumstances" (Dodgson 1993:378). Organisational learning consists of more than individual employees gaining knowledge. For the organisation to learn, knowledge captured by individuals must be shared, disseminated throughout the organisation and applied to modify current practices, creating a culture embracing constant change. As Hedberg (1981) observed, "Although organisational learning occurs through individuals, it would be a mistake to conclude that organisational learning is nothing but the cumulative result of their members' learning." Knowledge must be readily available to all members of the organisation. As Schein (1985) observed, "it is the internal integration of individuals within a shared culture that facilitates learning, and this provides a major organizational challenge". The share of learning occurs more often when there is a similarity within the group culture. Organisational learning has been described by Dodgson (1993:377) as "the ways firms build, supplement and organize knowledge and routines around their activities and within their cultures, and adapt and develop organisational efficiency by improving the use of the broad skills of their workforces". So that the knowledge that is of interest to individuals and the organisation is both tacit and explicit.

Other research suggests that individuals accumulate and experience learning in a cyclical process that transforms their experiences (Kolb 1984). According to Kolb, effective learning generally requires four kinds of abilities:

1. The ability to be involved fully, openly, and without bias in new experiences (concrete experience);
2. The ability to reflect on and observe experiences from different perspective's (reflective observation);
3. The ability to create concepts that integrate reflection and observation into logical theories (abstract conceptualisation); and,
4. The ability to use theories to make plans and implement action (active experimentation) (Kolb, 1984).

The reality of learning however suggests that learners will develop preferences and abilities for particular kinds of learning. Schein (1996) argues that management cultures are based on shared assumptions, similar educational background and organisational experience. People will be trained for instance to be both reflective as well as active experimenters. Unless trained and encouraged to think differently, most people think in a structured way, ordering their thoughts to line up with the established patterns and beliefs that are time-honoured (Morgan 1997). This process of structured thinking for handling various decision criteria is found in most plan-do-check-act cycles of continuous improvement where actions and strategies are repeatable on a consistent basis. Following Allinson and Hayes (1996), it appears that individuals of an 'analyst' style will engage in concrete experiences in different ways from individuals of an intuitive style. Individuals have varying style dispositions when exposed to various problem solving stimuli (1996:14), and only a small number have sufficient breadth (versatility) to perform well in multiple roles. It is generally acknowledged that a diversity of learning behaviours are required to help organisations create a versatile team capable of solving an array of problems quickly (Takeuchi and Nonaka, 1986:141).

For organisations to harness the potential of their employees they must do more than hope they will develop and exhibit these abilities. Each organization needs to expose its members to challenging learning experiences that will assist them develop the abilities they and the organisation needs. The learning experience needs to be rewarding for the employees as well as the organization. The setting and delivery should be tailored to the needs of adult learners and should be delivered in a way that places few barriers as possible to the learning.

The Technology Management Program

The Master of Technology Management program was offered to employees on-site and during business hours. Altogether about 100 employees completed at least one module, and about 20 have or will graduate with a Master of Technology Management award. At the same time as the Masters program was offered employees were able to take part in a program from Swinburne University of Technology. A significant number of participants have graduated with post-graduate certificates from Swinburne University of Technology. Whilst several Universities provided specialist modules, the University of Western Sydney undertook to project manage formal accreditation possibilities for the students, as one aspect of a Memorandum of Agreement relating to the whole program. The flexible nature of the Masters program enabled participants to undertake core subjects from UWS and electives from Swinburne, or other universities, and as long as the subjects were at postgraduate level and relevant to a technology management qualification they counted towards academic credit.

In most cases, standard modules were modified in terms of the assignment work, most of which were related to some issue or opportunity within the Aerospace Company. The modules were also modified to suit the delivery pattern. Rather than offer modules in a standard mode, such as 4 hours per week for twelve weeks, the modules were delivered in intensive mode over a period of 5-7 days, over 8-10 weeks. All assignments were tailored to address workplace issues and problems. This at times presented interesting challenges for deliverers who were required to sign confidentiality agreements before they could mark and assess assignments. Other modules were also developed specifically for the Company. For example the modules "Long Term Scenario Analysis" and "The Learning Organisation" were developed for the company as they believed senior management would particularly benefit from their content. These modules have been well received by participants from other organisations.

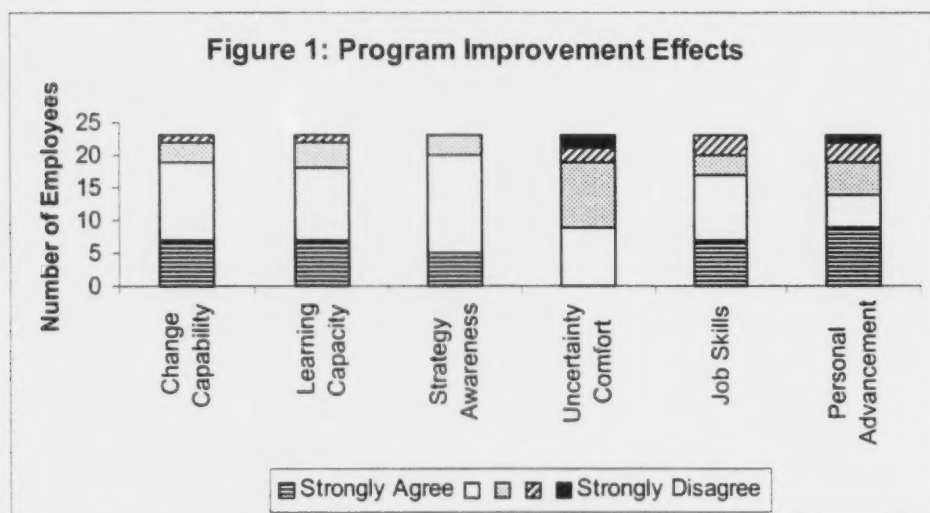
All lectures were delivered on the company premises, in Company time, and an intensive delivery mode was utilised. The virtues or otherwise of this are discussed in the results section. Later in the program, some employees from other companies also participated, as the intensive delivery mode was also suited their personal circumstances. Observations from this experience are also discussed in the results section.

Methodology

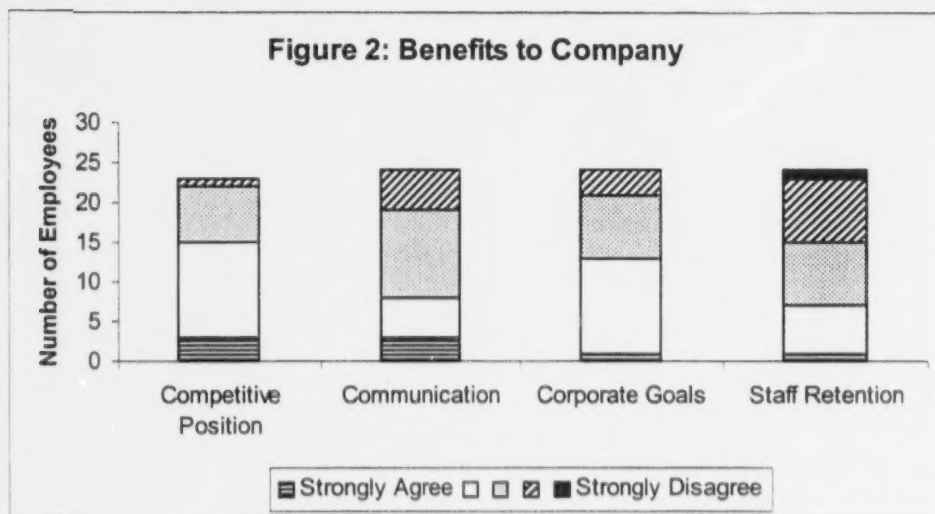
For this research participants in the program were surveyed using a mail questionnaire. Respondents were asked questions regarding their background, length of service with company, and courses undertaken to determine the similarities and differences in their experiences. The remaining questions asked participants about the outcomes of the programs for themselves and the firm; their opinion of the subject materials and delivery; if they had encountered any obstacles during the program; and if there were barriers to using new skills experienced after completing the program. Questionnaire were mailed to 65 participants, 50 of which are still employees of the firm and the remaining 15 are employed elsewhere. So far 25 respondents have returned their questionnaire giving us a current response rate of 38.5%. This paper reports on our initial analysis of responses, and we will report later in more detail on our findings and the views of line managers interviewed after the survey has been completed.

Results

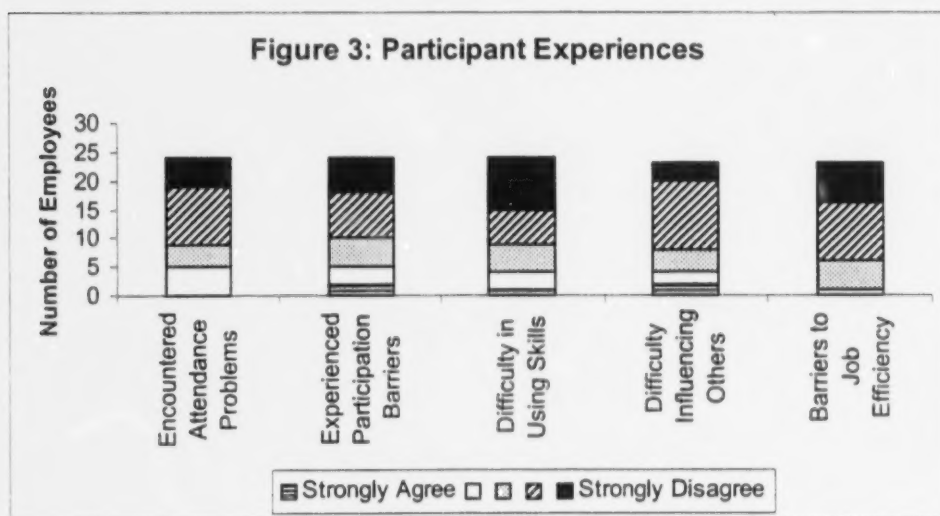
The respondent's experience with the company ranged from less than 5 to more than 20 years, with the "average respondent" having been with the company between 11 and 15 years. The majority of the respondents so far have completed one or more of the University awards surveyed. These survey results indicate that the majority of respondents have had a positive experience in the program. As can be seen in Figure 1 following, they believed that they had personally benefited, and that the company also gained competitive advantages from staff participation.



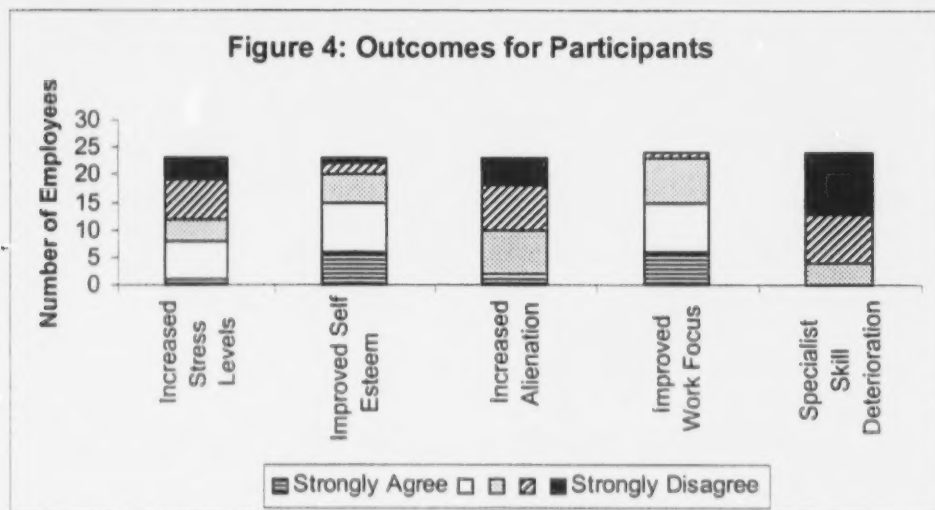
As can be seen from this figure the vast majority of respondents have reported improvements in their skills and capabilities as a result of program participation. In particular the awareness of company strategy, increased capability to handle change in the workplace and increased learning capacity reported by the respondents directly correspond with management's aims for establishing the program. This is reinforced by the benefits to the company reported by the participants as presented in Figure 2 following. The participants strong perception that the program had the effects of



substantially improving the companies competitive position and in enabling it to better realise it's corporate goals point to the program having more than just the effect of increasing individual participants skills or promotion opportunities. On being questioned on their experiences in the program participants reported supprisingly few problems (see Figure 3). On investigating the qualitative replies to the survey it was found that the majority of respondents who reported that they had "Difficulty in using the knowledge and skills gained in the program in my everyday work" or "barriers to doing my job more efficiently" were located in production positions, often at more junior positions in the company. Attendance problems tended to be reported by more senior employees that experienced greater difficulty in attending prescheduled session times (bushfires could not be made to ignite to schedule).



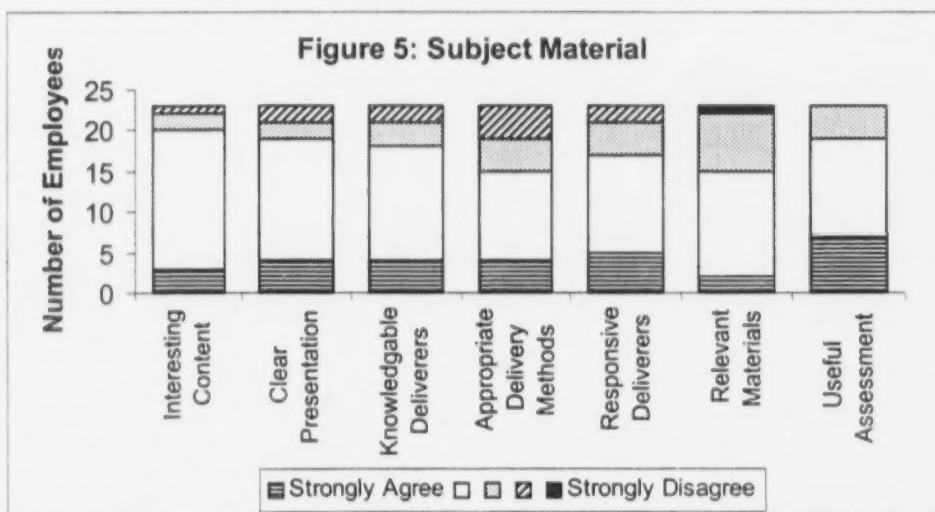
In analysing the outcomes for individual participants (see Figure 4) it was pleasing to note they strongly rejected the suggestion that a concentration on general technology management skills detrimentally effected their skills in their specialist area. In the few cases where participants reported increased alienation this was related to envy of their opportunity to participate in the program being expressed by fellow employees. This minor disadvantage was seen as being more than offset by the improvements in self-esteem and work focus that the program produced.



These quantitative results of the survey were reinforced by the participant's comments on the program. Participants reported "using new skills & knowledge in (their) day to day activities" and that the program had "...made me understand the way to deal with people of all types". Many participants reported that their "...focus has changed from technical aspects of the job to more appropriate approach, taking into account both technical and business issues", and that "The experiences gained have assisted by providing a greater awareness & understanding of business process & particularly provided me (with) the ability to assess situations from broader perspective's".

The outcomes for the participants and the company may best be summarised by the following comment: "In presentations to & discussions with (the company's) customers & suppliers the background information gained on project management & people interactions was invaluable in allowing me to confidently & usually successfully steer the conclusion on various issues toward an outcome beneficial to (the company). I believe the improved level of confidence, self assurance, people and presentation skills gained from the course was partly responsible for (the company) winning the ... project due to me being able to present a more professional style and outlook to the customer during negotiations."

As is illustrated in Figure 5 the participants also had a very positive response to the program's content and deliverers. These responses were mirrored by a strong



preference being expressed by the participants for the in-industry mode of program delivery, with less than 10% of the respondents expressing a preference for the course to be delivered in a standard mode (as outlined above). Over 90% of respondents agreed or strongly agreed that the company should continue to offer the program. It is also significant to note that over 75% of respondents indicated they would continue with the

subjects if they had to complete them in their own time (as opposed to in company time) approximately half of these respondents indicated that they would wish to continue with the program if the company ceased its financial support.

University staff observations

The benefits described above to the company participants were also reported by students from other organizations who studied subjects with the company's participants. These students were Master of Technology Management or MBA students who would normally have completed subjects on-campus in the normal mode, but who were able to elect to study with the company's personnel. All such students reported that the subjects studied in the in-industry mode utilising examples from the companies operations added significantly to their understanding of the course material. The majority of students given this opportunity elected to undertake as many subjects as possible in the in-industry mode.

This mode of delivery enabled the university deliverers to adopt a more interactive style of subject delivery. Freed of the constraints of a fixed weekly timeslot lecturers were able to design interactive exercises requiring extended delivery sessions, or fully utilise seminar discussions to extend students understanding of the course material. Ready access to the company's workplace enabled immediate implementation of textbook exercises (eg workplace safety audits). It also lead to the design of assessment tasks that not only tested the students understanding of theoretical concepts, but also provided solutions that were valuable to the company. Extensive utilization of team based assessment tasks were particularly valuable where company participants and students from outside the company worked together. It also provided a number of students who had no previous experience of university, but substantial work experience, a mentored introduction to study leading to their successful completion of either individual subjects or the entire course. The utilization of extended final group reporting, including individual questioning, overcame the problems usually associated with team-based assessment of individuals.

This customization of the presentation of existing subjects, along with the development of new elective subjects directly aligned with the company's training objectives, added significant value to the participants experiences. This is reflected in the participants response to the course delivery (see Figure 5 above) which is significantly better than that which would normally be expected to such course material presented in a traditional delivery.

Some company observations

An initial review of Company perceptions of the program was obtained from a series of telephone interviews with nine managers, some of whom participated in the program and some who did not.

Some of the course topics were seen as immediately relevant, others were seen as useful background, or "nice to have" but not immediately essential. The level of effort applied by the participants, compared with that observed in short courses and conferences/workshops, was very high. It is suspected that Company visibility and peer pressure had something to do with this, as well as the fact that there were clear deliverables and an assessment process (although participants were not obliged to complete this step)

Whilst a significant number of reports and assessments of company issues were produced as part of the course, this material and the enhanced skills of the participants have not always been utilised. The courses were run during a period of extreme turbulence in the company (not that there is ever likely to be a calm period). This meant that participation by some people was limited, people taking time to participate put pressure on their workmates to cope without them, and introducing further change to implement ideas from the course was difficult. In some cases however, participants and their managers did "deals" to compensate for lost time, and to use each module to find ways to enhance the operation of their area. This approach was very successful.

It was generally agreed that the collaboration competencies of the participants were greatly improved in a number of ways. Presentation skills and negotiation capabilities have been an asset in customer and supplier interactions. During the course, participants worked with company employees they had not met before, enhancing their overall knowledge of company operations and creating an environment for future cooperative working. Participants were seen as more open to critical questioning and exploration of options than their non-participant peers.

The course participant exhibited enhanced goodwill towards the company, and it was felt this helped retain staff in some cases. Conversely, the added experience and qualification may make it easier for participants to get a job elsewhere. There was thought to be some ill feeling towards course participants on occasions, either

because they were seen as privileged in some way, or because they started to behave differently. Certainly, participants were reported as having a broader view of the world, and in many cases, able to take on broader roles within the company middle management. In hindsight, this was a beneficial outcome, as years of business re-engineering had compromised the traditional shop leader – foreman – middle manager career path.

A number of managers had concerns about the impact on the bottom line of the company and the timing of the courses. The program was relatively expensive in time, cost and disruption, and whilst the company level of competency overall has been enhanced, and some participants believe they have delivered benefits, there is no clear-cut picture of the net financial outcome. Some felt that the program should have been phased over a longer time. In one year, 10 modules were delivered, and this was thought to be too much.

Managers raised questions of participant selection. There were questions of capability and attitude. Not having done a university course before did not seem to be an issue if the participant had current learning skills (eg from TAFE) and significant work experience, as the level of peer group support and mentoring between course participants was exemplary. But not being able to apply the learnings was of greater concern. Some people clearly did the course with the prime aim of obtaining an accreditation, and it was felt that this focus detracted from the potential benefits flowing to the company, at least in the short term.

Some barriers or constraints were noted. The level of senior management support for the program was variable across the company, and this influenced the ability to deliver benefits in some areas. Examples of "Best Practice" identified in the course materials were inconsistent with the management paradigms existing in some areas of the company, causing frustration for both the participants and the managers, even where the managers supported the course in principle. In a number of cases, particularly with production employees, the scope of their current job did not allow implementation of some of the learnings

Conclusions

Some Company strategic objectives being pursued via the post-graduate program were to stimulate people to adapt to change, to create a learning culture, to make better business decisions at lower levels in the organisation, and to rapidly adopt new technologies earlier in their life-cycle. The students reported an improved capacity for change. They reported a very positive attitude towards continued learning, with the majority indicating they would continue studies at their own expense if necessary. This is in contrast to an attitude at the beginning of the program (Sloan et al, 1999) where students said they would not have started if the Company had not established and paid for the program. The intensity of effort applied by most people was also notable. Where their working environment permitted, course participants felt they were making more balanced business decisions. However, there is no clear evidence that new technology introduction processes have improved in the Company as a result of the courses.

Course participants felt they understood the strategic direction of the Company better, and were able to contribute to its continued competitiveness. Management observations were that participants considered more options and were more open and receptive to critical questioning and dialogue as a result of the total course experience. Initial concerns about loss of focus on specialty core skills as a result of the programs broadening experience appear to be unjustified

The significant improvement in collaboration competencies observed has helped people work together effectively as the company continues to reshape its operations, and is providing a good foundation for extended inter-company collaboration.

Obtaining clear benefits from the program at the company bottom line seemed dependent on both the ability of the individual participant to drive change, and on the working environment to allow it. Beneficial change could be demonstrated when the two matched, but otherwise was less likely. This suggests two improvement actions for any future program: some screening of the participants ability to deliver change (not just their ability to undertake the study), and the establishment of a "deal" between the participant and their supervisor.

There were also questions of the digestible volume of coursework the company could handle, and of a process to obtain value from the course assignment reports. These are unresolved issues for the company.

The culture of teamwork adopted had a significant effect on the learning style of the participants. They accepted a mutual interdependence, and supported each other if one team member could not complete their part of the research for an assignment due to unforeseen workplace commitments. They valued whatever contribution or critique that person could make, focussing on outcome, not on process. It is suggested here

that this approach, combined with the real-world nature of the assignment work simulated the business environment quite well.

From the University point of view, being able to adapt course modules to align with company direction, and to deliver them in block form permitted a more interactive approach that showed the relevance of the theory and the study exercises. This resulted in a higher level of participant satisfaction than observed with traditional delivery.

In summary, the participants and the University gained considerable benefits from the program. Whilst the Company obtained some clearly identifiable benefits, opportunities for an enhanced outcome were identified.

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CO-PARTICIPATION AT WORK: KNOWING AND WORKING KNOWLEDGE

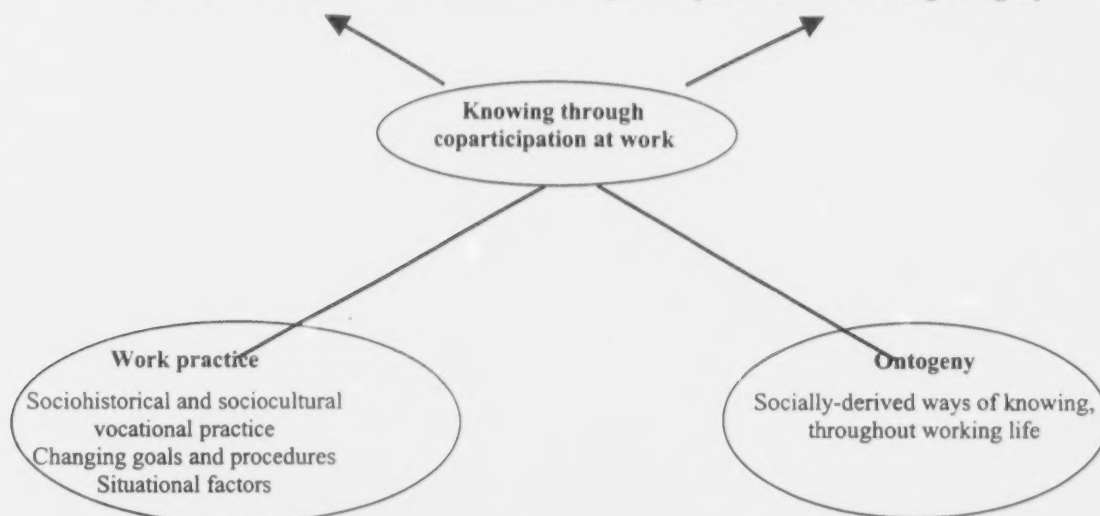
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This paper proposes a basis to understand the learning of working knowledge through work practice referred to as co-participation at work, comprising reciprocity between the affordance of workplace activities and guidance, and how workers elect to engage with work practice. The contributions workplaces afford workers learning are through the structuring of learners' access to workplace activities and guidance. The invitational qualities of the workplace determine the kinds of goal-directed activities that are provided in which to learn (to know), the distribution of access and support for participation at work. Individuals' engagement in work activities influences the construction and reinforcement of their working knowledge as they draw upon and transform their ways of knowing about work through their participation. Recent accounts of relations between mind and social practice, have strengthened the concept of interdependencies among doing, knowing and learning, and social practice. Other accounts acknowledge the complexity and problematic nature of these relations. The engagement in work and what is learnt are shaped at the intersection between the evolving practice of the workplace and individuals' ways of knowing which founded in their ontogenies. Work practice is constituted through historical, cultural and situational lines of development. Moreover, as workplaces are contested individuals' participation and knowing is shaped by the particular kinds of affordances extended to each worker. Within work practices, categories of activities and interdependence have been identified and used to identify social practice in terms of: (i) what will be learnt through participation and (iii) how workplaces afford and distribute opportunities to participate.

Knowing at work

For those interested in the development of adults' working knowledge, a key concern is to understand how individuals 'come to know' or learn that practice throughout their working life. Given the associations between practice and learning, in both its cultural form and cognitive consequences, understanding how learning proceeds through work may assist comprehending how to maintain and develop working knowledge across a working life. Discussions about adult development of this kind necessarily draw upon and may inform current deliberations within sociocultural and historical activity theory. These debates are unified by an overall concern to understand further the relations between individuals and social practice, manifested here as knowing through work. To conceptualise the reciprocal bases for thinking, acting and learning that constitutes knowing throughout working life, the paper discusses the concept of 'coparticipation at work' (Billett 1999) --- how the workplace affords participation and how individuals elect to participate in work. Both sources of participation influences how and what workers come to know. Coparticipation occurs at the intersection of the trajectories of the evolving social practice of particular workplaces and individuals' socially-influenced personal histories or ontogenies which premise participation in the workplace (see Figure 1). It emphasises mutuality between contributions to knowing (thinking, acting, learning) afforded by the workplace, on the one hand, and how individuals decide to act in that practice, on the other hand.

Figure 1 – Intersection between the evolving social practice and evolving ontogeny



However, not depicted in Figure 1 is the simultaneous participation in other kinds of social practice that may effect individuals' participation at work (Billett 1998b). Simultaneous participation could include those likely to directly influence engagement in the workplace such as membership of a union, professional groups or through recreational activities with coworkers. Cultural practices, family commitments or other work commitments may likewise influence individuals' participation at work. Work practice is historically and culturally constituted, in terms of the vocational activities conducted, and situational factors manifest how those activities are conducted and valued (Billett 1998a). The affordances (Gibson 1969) or invitational qualities of workplaces includes the provision and distribution of opportunities to participate in different kinds of goal-directed activities and guidance in the conduct of work activities. It is the combination of activities and guidance that is central to 'knowing at work'. The term 'knowing' is used here to link learning with thinking and acting as something projected out 'beyond the skin' (Wertsch 1991; Hutchins 1991), rather than as an internal process of the mind. Secondly, the concept of 'knowing' may assist a shift away from Anderson's (1982) categories of knowledge (i.e. declarative, procedural) that are seen as separate yet interdependent and are often portrayed as being entities that act *upon*, rather than on acting and developing *within* the social world. Therefore, the concept of 'knowing' is used to draw together processes separately described as problem-solving, learning and transfer in the cognitive literature, and to represent the means by which we come to know and engage in knowing as processes more than structures which have an emphasis on fixedness.

As acknowledged in both the sociocultural (e.g. Rogoff 1990, 1995) and cognitive literature (e.g. Anderson 1993) the kinds of goal-directed activities in which individuals' engage shape the construction and reinforcement of knowledge. The quality of guidance afforded by the workplace influences the access to work-related knowledge with its historical, cultural and situational geneses. Intentional learning opportunities improve the prospect of engagement in work activities as being generative of rich learning, in ways that everyday participation is unlikely to achieve (Ericsson & Lehmann 1996). In particular, the kinds of knowledge required to be made accessible at the situational level (e.g. work procedures, conceptual knowledge that is opaque) is dependent upon close guidance by more experienced coworkers. However, ultimately individuals determine their engagement with the activities and guidance afforded by the workplace, and what they come to know through these encounters. Individuals' socially derived ontogenies develop and transform through participation in unique combinations of social practice throughout their life. In all, coparticipation at work aims to advance a view of knowing or learning through working life, thereby contributing to discussions about the relations between individuals and the social world where doing and knowing coalesce.

Coparticipation at work

Affordance of participation in the work place

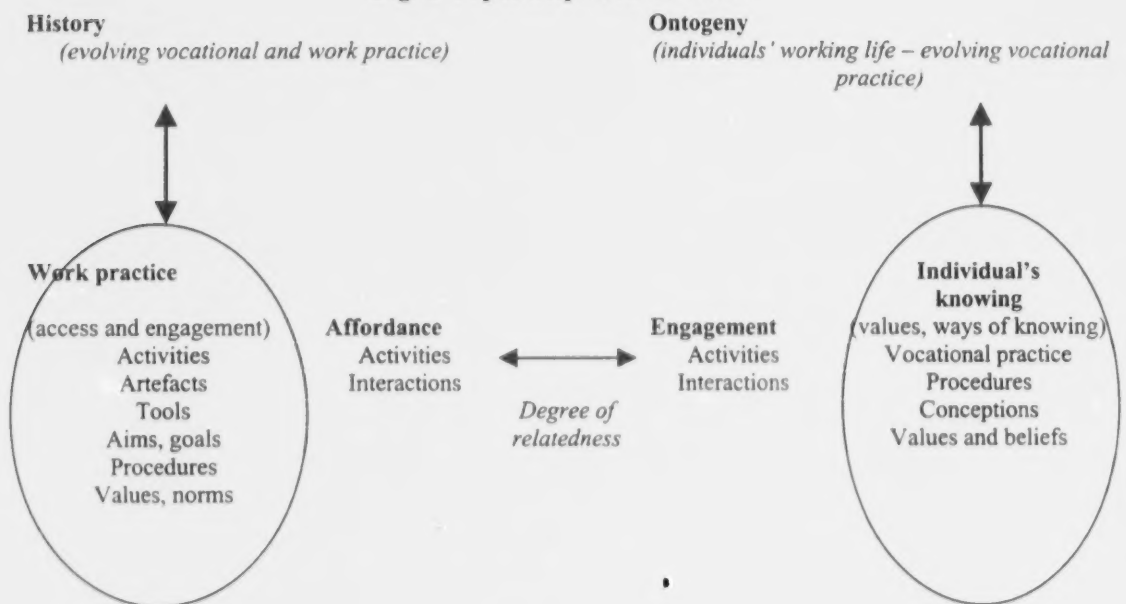
Working life of necessity involves engaging in socially-determined activities, and with partners, tools and signs. Engagement in work activities assists the construction and reinforcement of knowledge as these activities draw upon and transform existing ways of knowing about their work. Through this engagement, how we learn at work and what we learn is socially mediated throughout working life by: (a) the work activities individuals engage are a product of social practice and through which doing and learning coalesce (Engestrom 1993; Leontiev 1981; Wertsch 1991, 1998); (b) close interpersonal interactions between social partners makes knowing accessible and guides its development (Vygotsky 1978; Rogoff 1990); (c) more indirect (distal) social and cultural practices influence individuals' thinking and acting (Scribner 1985; Cole 1985, 1998); and (d) the microgenetic development (Rogoff 1990) or moment-by moment learning (Rogoff 1990) afforded through work. Accordingly, the contributions of workplaces are in the affordance of access to work activities and guidance. It follows that, how workers participate and come to know, are influenced by the accessibility of opportunities to engage with the work practice.

Understanding these affordances requires a consideration of the social practice of work at the cultural and situational lines of development. Although knowledge is socio-historically constituted and shaped by sociocultural practice it is manifested by and embedded within situational factors that comprise the basis for performance (Leontiev 1981; Scribner & Beach 1993; Engestrom 1993). The knowledge to be constructed, the kinds of problems to be resolved and problem solutions are products of particular communities of work practice, as are the kinds of support and guidance available (Lave & Wenger 1991; Wenger 1998). Therefore, each workplace likely privileges particular goals and procedures which are products of a unique activity system and particular pathways of activities that lead from peripheral to full participation. (Billett 1998a; Lave & Wenger 1991; Scribner & Martin 1993). Together, the mediation afforded by work comprises the

activities individuals can potentially engage in and the guidance they can access in those activities that together comprise inter-psychological contributions that direct learning. The kind of goal-directed activities individuals are invited or able to engage in (i.e. are they routine or non-routine), will likely have consequences for what they come to know through their participation. The availability of access to direct guidance in the workplace (required to access knowledge that would otherwise not easily be learnt) will also influence what individuals come to know in their working life. Accordingly, the willingness of coworkers to provide guidance, to whom and under what circumstances, determines the quality of access to working knowledge. Coworkers who fear displacement, are unlikely to support the learning of those who they fear will displace them (Lave & Wenger 1991).

How affordances are constituted in workplaces, are shaped by workplace hierarchies, group affiliations, personal relations, workplace cliques and cultural practices, as well as the kinds of activities in which individuals are able to or requested to engage (Billett 1995). Accordingly, rather than benign, social practice such as workplaces, are highly contested (e.g. Darrah 1996; Hull 1997). Consequently, opportunities to participate in workplace activities, to access support and guidance are not always available or not uniformly distributed. Beyond judgements of individuals' competence, it seems opportunities to participate are distributed on bases including race (Hull 1997), gender (Tam 1997), worker or employment status (Darrah 1996) and affiliations (Billett 1999). Darrah (1996) referred to support and opportunities for learning being directed towards those workers whose role is most valued in the workplace, whereas an analysis of other workers indicated that their tasks were equally demanding, although not recognised as such. Coal workers whose affiliations were not acceptable to experienced coworkers were inhibited from gaining the practise required to become effective in new tasks (Billett 1995). Contingent workers (i.e. those who are part-time and contractual) struggle to be kept informed (Tam 1998), to be granted opportunities to expand their role and to be supported by guidance from experienced full-time employees. Accordingly, the invitational qualities of the workplace are far from benign or evenly distributed.

Fig. 1 Coparticipation at work



Further, the situational factors that constitute social practices are in constant transformation, (Lave & Wenger 1991) thereby requiring access to constantly changing understandings and practices required for working knowledge. Moreover, the affordance of the workplace in terms of kinds of tasks, their goals, interactions, participants, relations in social practice such as workplaces are likely to be constantly changing, as the elements of the activity system are subject to change or evolve.

Individuals' participation as engagement at work

Individuals' knowing is not a process of socialisation or enculturation (e.g. Lawrence & Valsiner 1994). Learning is not wholly mandated by workplace affordances. Instead, the agency of individuals determines the means of engagement in activities and response to guidance. There are distinct bases for understanding how individuals will participate. Firstly, individuals engage simultaneously in a range of social practice. They also split their time, effort and attention in asymmetrical ways among these practices (Billett 1998b), with

individuals' interests and priorities directing and tempering participation. Full-bodied participation in one social practice may be mirrored by reluctance in another, perhaps because of what Valsiner (1994) refers to this as *relatedness*. This idea emphasises the relations between the qualities of the social practice and the beliefs and values of the individual. Individuals might engage effortfully in their paid vocational activities, while participating less effortfully (or even resentfully) in the rostered school tuck-shop activities. Some workers are required to engage in multiple sites of employment which distributes their participation, and inhibits their ability to participate fully even in a desired work situation Hull (1997). Moreover, applications of vocational practice will not be perceived uniformly by workers. Underground coal-miners may be reluctant to engage in open cut coal mining (the work of 'rock apes'); and hairdressers from trendy inner city salons might be uninterested in work in a suburban salon. Consequently, individuals' participation in work can be partially understood by their personal histories or ontogenies (Scribner 1985), that have resulted in particular ways of knowing (Billett 1997).

Secondly, perceptions of the quality of affordance reside with individuals. For instance, coal miners viewed safety-training as management's attempt to transfer to them the responsibility for mine site safety (Billett 1995). Workers of a Vietnamese heritage resisted teamwork which they perceived as reflecting communistic values of collective rather than individual action (Darrah 1996). Similarly, what Hodges (1998) came to know through her participation in teaching practice was quite different from what was intended, when the reality of practice conflicted with her personal values. Valsiner (1994) refers to the co-construction of knowledge, the reciprocal act of knowledge construction through which both the object and the subject are transformed. This concept thereby emphasises not only the participatory and identificatory consequences of relatedness, but also the cognitive outcomes. Analogously, the interactions between individuals and social practice are reciprocal and interdependent. This engagement is coparticipative --- an interaction between how the workplace affords participation and how individuals participate in that social practice. Therefore, to understand learning at work requires an elaboration of the relations between social practice of work and individuals' thinking and acting. This elaboration may be assisted through delineating and identifying the attributes of the workplace and how individuals engage in the social practice.

Delineating co-participation at work

A scheme comprising categories of Activities and Interdependencies has been advanced to assist identifying coparticipation at work. Table 1 presents an overview of both sets of categories. This scheme was developed from an analysis of recent accounts from the cognitive, sociocultural, anthropological and sociological literature that focuses on paid work (Billett 1999). It identifies the centrality of interactions or interdependencies for work practice, thereby considering factors beyond the usual cognitive conceptions of expertise. This scheme provides: (a) a means to understand what individuals will likely learn through participation in work and (b) how workplace factors shape individuals' ability to participate in work. The scheme's analytical framework is consistent with sociohistorical activity theory (Engestrom 1993; Leonteyev 1981; Scribner & Beach 1993), emphasising the socio-historically, culturally and situationally-derived activities and roles that interactions and interdependencies play in inter-psychological processes. Activities are used to categorise and identify the requirements of the goal-directed activities of the workplace and the likely consequences for knowing arising from participation in those activities.

Interdependencies refer to interactions. For instance, it assists describing the consequences for workers who are contingent, part-time or who are physically or geographically remote or whose participation is assisted or inhibited by workplace cliques. *Interdependencies*, in particular illustrate aspects of individuals' engagement in the work practice. *Activities* can be used to identify the demands required to perform the work activities and, consequently, the learning that might arise from full-bodied participation in these activities. These demands can be understood in terms of its 'routineness', the scope of decision-making involved, the management of the tasks simultaneously with others, demands associated with actual performance, the range of factors required to be undertaken, and the complexity of the activity. The routineness of activities determines whether the task can be undertaken through existing ways of knowing (leading to refinement), or whether they have to be extended (leading to new ways of knowing). Therefore learning arising from these tasks ranges from reinforcement to new learning. Consequently, the kinds of activities that individuals are invited to undertake in the workplace shape the kinds of development that occurs throughout their working lives. Equally, when individuals are guided to understand the range of compounding variable that influences effective task completion, the individual's development can be richly enhanced.

Table 1 - Activities and Interdependencies (Billett 1999)

Activities within work practice are held to be described in terms of their:

Routineness – the degree by which work practice activities are routine or non-routine thereby requiring robust knowledge.

Discretion – the degree by which the scope of activities demands a broader or narrower range of decision-making and more or less autonomous practice.

Intensity – degree by which the intensity of work tasks demand strategies for managing the work load and undertaking multiple tasks simultaneously

Multiplicity – the range of activities expected to be undertaken as part of work practice

Complexity - the degree by which work task decision-making is complicated by compounding variables and the requirement for negotiation among those variables; and

Accessibility (opaqueness of knowledge) - the degree by which knowledge required for the work practice is either accessible or hidden.

Interdependencies within work practice are held to be describable under:

Working with others (teams, clients) – the ways work activity is premised on interactions with others

Engagement - basis of employment

Status of employment - the standing of the work and whether it attracts support

Access to participation - attributes that influence participation

Reciprocity of values - the prospects for shared values

Homogeneity - degree by which tasks in the work practice are homogenous. Similarities may provide for greater support (modelling etc) in development of the ability to perform

Artefacts/external tools - physical artefacts used in work practice upon which performance is predicated

Interdependencies also provide a means to understand how interactions are transacted in workplaces. How individuals work with others, the standing and status of their employment and their access to participation determine the invitational qualities afforded individuals. The homogeneity of workplace tasks indicates whether the individuals are solitary or are conducting similar kinds of work tasks to other coworkers. The degree of homogeneity, influences the availability and kinds of guidance and support. Also, the access to workplace artefacts, upon which workplace performance can be premised, is likely to be distributed in different kinds of ways. These categories provide a tentative basis to analyse work practice, consider the potential for knowing and under what bases coparticipation occurs in the workplace, and its likely consequences for knowing and development at work.

Conclusions

The concept of coparticipation aims to advance a reciprocal view of knowing or learning through working life. This account is salient given that workers are being expected to take greater responsibility for the currency of their working knowledge and when employers are increasingly avoiding some of their traditional responsibilities to assist this development. It also helps understand the difficulties individuals may encounter in learning to maintain their vocational currency or develop it further. It is not and cannot be individuals' responsibility alone. The conceptual significance of coparticipation at work can also be seen as illuminating relations between the social world and the mind as an intersection between the trajectories of the constantly transforming social practice of the workplace and individuals' evolving ontogenies as they participate in different kinds of social practice. Central to that challenge is identifying and explaining further the relationship between the mind and behaviour, and consequently understanding the relationship between the mind and the external world. An examination of working life as coparticipation seems to support this endeavor.

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GLOBALIZATION, WORK AND EDUCATION A MENACING FUTURE

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The Global Village: living in a handy world

When we speak about the Global Village we don't only evoke a "little handy world's image", we recall an explicit set of concepts in order to describe a phenomenon that mainly characterizes itself by making every spot in the world at hand for everybody. New information technologies have made the world smaller, and everybody is at a keystroke from everywhere nowadays. Although globalization is motorized by technical transformation it is neither a simple communicational revolution nor a mere technological fact.

Globalization means a process that has dominant and extended effects in several domains such those of the values, that of poverty and richness, or those more related to the human condition as the disappearance of ancient communication's limits or the migrations' frontiers...

Globalization is a continuous and dynamic process that imposes a vision of an ideal international order ruling even individual's behavior; that improves the links between peoples and nations and elicits consensus on orientations for economy and social life on which such interdependence could be based. That tends to standardize the diverse cultures and the values these cultures are based on, changing the diversity into uniformity; that substitutes the individual or national instances of decisions in their own politic, decisions that are just imposed as normative, and finally that tends to universalize the standardized cultures.

Globalization develops itself in a certain degree of anonymity, since there is no responsible authority that manages this parallel system opposite to the National States. The whole system is governed by the addition of particular's decisions. There is some kind of shocking wave that appears on the top or at the bottom of the system nevertheless nobody has originated it, nobody master it: it is only a consequence of summing up the individual operators' selling and buying decisions on the financial market.

On behalf of the tendency to universalize the standardized cultures, the whole humankind is entering in a Unique Global Civilization that has, at least, two angles to be seen from. This Global Civilization implies simultaneously a great progress for everybody, and a hard task in order to rescue the cultural inheritance of particular nations, of each peculiar cultural group, facing the invading global cultural patterns.

Global civilization: progress and destruction

Three remarkable points define Global Civilization. The first one is that the generalized scientific point of view and the technological development unify humankind in quite an abstract level. Secondly, and as a consequence, Policy and Economy become rational matters all around the world. Finally, a universal way of life evolves throughout the planet.

Global Civilization is an abrasive tool for the mythical and ethical nuclei at the bottom of all cultures. These nuclei, formed through the centuries by the Great Civilizations of the past, constitute an inheritance for humankind. If they are lost, a specific memory of humankind dies forever.

One of main consequences besides the erosion of the cultural nuclei is the extinction of hundreds of Languages, as telecommunications, tourism and trade make the world a smaller place. Languages are dying at an alarming speed rate. Linguists estimate that a language dies somewhere in the world every two weeks. The peculiar point of view of each particular culture to face reality is in danger. The meaningless number of victories of some peoples in this struggle to save their own languages doesn't help to diminish the danger, the cultural threat. Each language represents a distinct ethnic or cultural group with its own beliefs and its own uses, rituals and ceremonies, some of which have been performed for hundreds or perhaps thousand of years. Deprived of their languages, out of their lands, without their own landscape, all these people look at their own identity vanishing as the fog at sunrise and stay naked and weak, facing universe, without roots, included into a Global Culture that will last foreign for them forever..

Growing up without roots

What is evolving into a Global Unified Culture is an inconsistent set of strange habits, distant from the group identity and ruled by the tides of media mass fashions. Live within a cultural framework without traditional rootstock signifies the absence of a real culture to live in, the cultural orphanity at global level.

Nevertheless it may appear as a merely abstract point it is dramatically real, it generates discrimination and makes manipulation possible, and both consequences sway in the every day life of the individuals. "From Ladach to Lima and from Beijing to Buenos Aires, people across the world are adopting similar tastes in dress, food, entertainment and popular music."

In addition, everybody knows the cavalry of refugees, or that of the emigrants, forced to leave their countries for living as foreigners, far from their homeland, out of their culture. The lack of a rooted Cultural Framework makes the individuals, foreigners even in their own country, refugees inside their own homes... "The Global Village is growing up influenced by the strongest nations in the world. Then the Global Village speaks English, and American English of course, eats hamburgers and French fries, also." we have told some years ago trying to describe the consequences of cultural erosion in developing countries, but nowadays we know that the Hamburger Culture means a devaluation of every culture, constitutes an universal lost of basic values, it means the emergency of an universal light cultural framework, something like a cultural equivalent for the fast food..

The triumph of the Global Civilization, everywhere the same and integrally anonymous, over local cultures would represent the creative culture at zero degree, the skepticism at a planetarian scale; the most absolute nihilism in the triumph of only well being mind set. This danger is as great as the atomic or ecological threat, but more probable.

This phenomenon, described as global, appears also within the developing countries themselves. The peripheral spots, with low demographic rates, with ancient ways of extracting or agricultural working, without access to the benefits of the goods of progress, of the technological society, are just condemned to poverty and to disappearance as identified cultural groups.

The humankind is able nowadays, as never before, to start a universal dialogue between all the cultural groups of the world. The role of Education in the prospective world, "small" and technological, would be to start a universal dialogue between all the Cultures. In such a way Education will save the values now in danger since only in a multicultural dialogue we may rescue the cultures of weaker people.

The working world, another menacing reality

This global world, with its universal light culture is a dynamic world, with a changing economy, that makes working sector to change at a high speed, too. Automation reduces the number of job positions, the remaining ones require high performance skills, and these remaining job positions don't last the same forever: *they change, at least, every four years into a new one.*

If we take into account that life expectancies have increased in thirty years since 1900 the problem became more crucial. The daily higher performance skills asked for by companies and the obsolescence of the aging worker's skills to face new exigencies, increase the problem and generates a marginal demographic zone: the older workers.

In such a world, a lifelong job is a meaningless idea, the majority of jobs which our children will be doing to live from doesn't exist yet and nobody knows exactly which skills future job positions will require.

Reductions of job positions' number, a worldwide competency for remaining ones, generate incertitude about possibilities of getting a job. The skills required for emerging new jobs, the ever-changing profiles of them, the continuing and growing up obsolescence of workers' skills, will be the menacing trends of the future. They will point out the way to be followed.

The economical perspective in the region

The Economical prospective in the Region includes not only the Mercosur, the bloc made up of Argentina, Brazil, Paraguay and Uruguay, at work since nearly ten years ago, but the Free Trade Area of Americas (FTAA). The FTAA process aims to reach an agreement by the year 2005 to remove the barriers to trade among all the countries of the hemisphere. The preliminary steps to the 2005 agreement have been successful because the nations of South America and the Caribbean share the same goal: free trade and

regionalism as powerful instruments of development. This means to compete not only with our neighbors but also with giants as Canada and the States, what will add up new problems to ours.

The laboral difficulties for instance. The laboral reform put in danger laboral rights gained by workers in not-so-distant past and often provokes strong reactions. Career mobility, the end of lifelong jobs, and the dramatic situation of a lot of people with no job at all define a dramatic situation. The privatization of Public Services Enterprises, the rationalization of the Public Administration, and recession has provoked a drastic reduction of the job positions, also.

Our people, bad prepared for facing such laboral situation but is not prepared at all for facing a competence with a laboral workforce such as that of the USA or Canada, what constitutes a menacing prospective in the near future, like fight against a giant...

Fighting against a giant

The United States have speedy and efficiently reacted to the dangers of Globalization. I'll mention some example of the American response in the field of Education.

President Clinton, in his Call to Action for American Education in the 21st Century (1997), made clear that his priority was to ensure Americans the best education in the world.

He stated that U.S.A. needed strong, safe schools with clear standards of achievement and discipline, and talented and dedicated teachers in every classroom. Every 8-year-old might be able to read, every 12-year-old might be able to log onto the Internet, every 18-year-old might be able to go to college, and all adults might be able to keep on learning. He issued a ten-point call to enlist parents, teachers, students, business leaders, and local and state officials in this effort.

Learning must last a lifetime, and all Americans must have the chance to learn new skills. Basic literacy and adult education are more important than ever. Adults should take on the responsibility of getting the education and training they need, and employers should support their efforts to do so.

In Presidential opinion, the US schools must now prepare for a transition as dramatic as the move from an agrarian to an industrial economy one hundred years ago. Every classroom and library must be connected to the Internet to put the information age at American children's fingertips.

Equipped for the Future Project.- Some Educational Laws and Projects have been signed in order to fulfill these objectives. The National Institute for Literacy, started in 1993 "Equipped for the Future Project", an effort to develop a "customer-driven, standards-based reform process" of the US Adult Education. They began by asking adult learners what they needed know and be able to do in order to be literate, compete in the global economy, and exercise the rights and responsibilities of citizenship. Using the responses the EFF project has developed standards grouped into the three main adult roles: worker, citizen, and family member. The EFF project purposes four fundamental objectives for adult learning: 1) the ability to access information, (2) the capacity to express ideas and opinions, (3) the skills to take independent decisions, and (4) attitude to learn how to learn to keep up in a changing world. The EFF project, planned since 1994, is just starting.

School-to-Work Transition The School-to-Work Opportunities Act (1994) was designed in order to improve student learning, in-school retention, and transition to the workplace. Experiences that integrate school-based and work-based learning were promoted to improve the quality of education and increase students' knowledge. The implementation of S-W-T Project requires restructure secondary education and extensive involvement of business world in the preparation of youth as work force.

The STW initiatives are often formal part of a secondary or post secondary curriculum, involve active participation of employers, include actual or simulated on-the job experience, and result in a formal certification of skills. Although there isn't a general approval of the STW Project in the States, it focuses on a crucial theme about education: what is school used for.

National Skills Standard: The increasing demand of a competitive international economy has led to strengthen the connection between education and employment. STW Act, as a reaction to this demand was not enough. National Skills Standard Act (1994) motivated the US National Skills Standard Board to initiate 22 pilot projects pursuing two main goals: the development and implementation of industry-based skill standards as a short term goal and to improve advance innovation and reform in schools and in the work place as a long term goal.

The option in developing and implementing industry-based skill standards was between two models: the worker's skills related frame work, focused on training to perform specific tasks ignoring it's relations; or the professional's framework in which the focus is less on what to do and more on the functions of generic job categories as: problem solving, reasoning, using judgement, contributing ideas, all significant tips in a high performance workplace.

This up-to-date educational framework is that of the nation that is nowadays our main competence and will become the principal copartner of our Region since the year 2005. But we have to affront these challenges in an sport manlike way...

Education towards the future

In such a framework Education, in our Region, will play a singular role to rescue the values and to improve progress at the same time, to cut off the distance between our people and those of the developed countries, to prepare the workers, professionals and technicians for the oncoming universal work marketplace.

Defending our own culture

To have strong cultural roots, an own culture to live in, is an essential human need. The lost of the own cultural framework means the lost of the human ecological environment and without it humankind stays naked, defenseless in the desert.

There are many cultures, not only one Culture. Any cultural monopoly, real or illusory, has finished. Only making Globalization a non-lethal phenomenon for the culture of the Region we might manage us to integrate progress into our Old Culture and our Old Values might inform the use of new technologies. A Copernican inversion in the field of education would be necessary, of course,. We are not speaking about changing blackboards for PCs and lectures for active learning. We are speaking about that scientific set of concepts, coeval to the French Revolution, which guides our education and must be changed soon.

An ideal pedagogic model would be built up to restore the ethical mythical nucleus of our people, to improve the self-esteem, to develop positive attitudes facing the oncoming changes, to acquire and improve the skills and competencies needed to be ready for the exigencies of the new job positions.

Education might increase the willing to compromise, promote students engage themselves in career exploration and to seek career counseling. Education must leave the obsolete educational model of the 1700s, rescue the forgotten traditional values of the people, improve the creativity and from this solid base construct an up to date model.

Some ideas to begin with

A new deal in education

With such philosophical-pedagogical background, to focus education on technical requirements of the new economical order may be not only possible but also an excellent option. Today, the challenge is to change habits and skills of the whole population, to get a niche in the global work marketplace, preserving intact the old values our grandparents inherited us from the countries they had came from.

The world wide work marketplace, the increasingly changing job positions, and the requirements of high skilled employees or workers, will require new exigencies, and the job profiles are not known beforehand. The education will help our children or adults to face the challenges of an unknown and unknowable future job.

Three preliminary points may be the most relevant:

First, it is wise to assume that we must emphasize the importance of some foundation skills such attendance, timeliness, attention to detail, and pride in the job done, intrinsic as well as extrinsic. The school must leave the actual stress on contents in order to improve the information management abilities. The continuous upgrade of information provokes the obsolescence of the newest knowledge within hours. To know how to manage information become more important than merely learn it.

Secondly, as consequence, the school must provide children or adults a minimum set of basic instrumental skills as reading, writing, mathematics as it did in the past but using the newest psychological advances in the matter to reach every child in the Region. Only one child without Basic Education, only one illiterate adult is a luxury we may not permit us.

Thirdly, the accent task will be set on the conditions that allow a new model of woman and of man be developed in order to face job's and to face also life's exigencies of autonomy, self-direction, flexibility, competency.

Finally the Adult Education might be planned in order to fulfil wider goals than mere literacy: to face a new role as a member of the community, a new role as a member of a family, and a new role as a worker that faces an ever changing working market.

With a long term planing, with surveys and evaluation of the resources and needs, mapping the needs and expectancies of the actual or potential learners we may set up our own aims in order to avoid exclusion. It will be time to look at the Central Countries' paradigms, to review them and choose among their methods and projects which to adopt and which refuse.

It will be time to embrace, perhaps, the US's four educational aims for the 21st century we have just mentioned: *every child reading at 8-years, logging onto the Internet at 12-year, being able to go to college at 18-year, and all adults being able to keep on learning.*

The Japan's links to historic values, the US's Equipped for the Future Project, the French experience in assimilating the migrants from Africa after the Argil's Independence, the Canada's way to integrate Caribbean or Asiatic immigrants, may be some sources of inspiration for an integral Educational planing for the Region.

A new teacher profile for the New Millenium

Rescuing the values through cultural dialogue, learner focused teaching, apprenticeship as main way of learning, team based and constructive learning, learning while doing, situated learning, seem to be the directional lines to guide the development of education in the near future all round the world. Computer Based Distance Education and Training (CBDET) may be the way to prepare a world wide competitive working force. Nevertheless these are not yet the tasks our Teacher's Colleges prepare students through.

A new model of curriculum for teacher's training is needed, a new model of teacher's career must be developed. Ten years ago we have published "Integrated Teacher's Degree Model" (Modelo de Carrera Docente Integrado) and proposed a few measures to improve the teacher's under graduate and post graduate training.

We proposed, at first, to upgrade each Teachers' College (Instituto Superior de Formación Docente), into a University College so the three years long teacher's training would become the first step for a longer progressive curriculum that would allow teachers to reach Master, or Doctorate degrees in Education.

The proposal, that included academic, cultural, scientific, technological learning, and field training for becoming teacher, supposed a strong solid personal personality to begin with, what implied a previous selection of applicants.

A methodological revolution

The wide spread of new technologies are forcing the changes of education everywhere, even in the central countries. Education supported on the information technologies, an extended distance education, the exigencies of growing up technological world, the demands of basic education for working, and of re training workers for recycled or new positions, and the general use of the information technologies have made more natural if not necessary, to adopt a more strict psycho pedagogical framework to face the task Piaget's psychological research, that of the Russian Vigotsky, or Seymour Papert's, the MIT's scholar, promote individualized, hand on learning, collaborative and situated learning, learning while doing, constructive learning, learner centered learning, multiple ways communication learning etc. These are nowadays not only possible features but oncoming ones in the educational systems of the world. This coincidence points out that the teachers training needs to be reformulated from a new psycho pedagogical angle as well as from an up-to-date technological landscape...

Education as the main target...

A lot of subjects must be included into an integral plan of Educational Reform for the Area, but we have omitted them intentionally, if not it would be an endless saga of laments.... or and endless list of wishes....

We have only a need: to think once again on education as we did in the past, to return to the spirit of those who organized the Nation who centered their political action on education and started the adventure of creating a Nation.

We must look forward, put hands on the task create the new conditions for a new education for our people, taking the risk, facing oncoming challenges sportsmanlike, dreaming in a better future "for us, for our sons, and for all the men of the world" who wish to inhabit the Region...

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WORK AS THE CURRICULUM: PEDAGOGICAL AND IDENTITY IMPLICATIONS

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The end of the twentieth century has seen rapid changes in the economy of higher education (Boud and Symes 2000). These changes have been accompanied by a dramatic increase in innovative curriculum developments. They are manifest in courses for new and emerging professional areas, a broadening of student interest away from single-subject degrees and new forms of engagement by educational institutions with the world of work. Alongside these there have been the beginnings of a shift of interest from the relatively well-ordered traditional disciplines towards the unruly domain of professional practice and transdisciplinary knowledge, where increasingly work and workplaces are becoming key sites of and sources for the academic curriculum.

This paper points to some of the features involved in this shift of focus. It examines challenges posed by a new form of practice in higher education institutions. This practice—work-based learning—has been brought about by changed relationships between those institutions and other enterprises. It involves new kinds of students who do not fit the pattern of either the non-traditional mature-age student returning to study, nor the access student, but which share some characteristics with both of these.

The paper draws on our experiences and efforts in theorising as well as in designing and delivering work-based learning programs within a higher education setting. Through these experiences we have confronted head-on the multiple conceptual and practical challenges to our identity, our disciplinary and institutional structures and our work practices. All of these challenges have contributed to disturbing our understanding of the role and function of higher education, our understanding of what is legitimate academic knowledge, what are academic standards and our belief in the resilience of our disciplinary and teaching and learning practices.

We focus on work-based learning, not because it alone signifies an end to higher education as we know it, but because it epitomizes many of the challenges in contemporary academic work. These challenges are a consequence of the changing relationship between knowledge and the university in these 'new times'. Of significance is the way these changes have meant that the university is becoming more open within its internal structures as evident in the increased number of cross-faculty courses and cross-disciplinary institutes and centres. But it is also more open in its relationship with the outside world as seen in the increasing number of entrepreneurial and research relationships with industry and government bodies (Turpin et al 1996). These openings are both cause and effect of the reduction in status of universities as primary producers of a particular kind of knowledge as well as the loss of their monopoly position as certifiers of competence in knowledge production (Solomon & Usher 1999). These losses not only have a symbolic significance, but also have a considerable number of practical consequences.

While work-based learning challenges many aspects of existing practice, the paper focuses on two of them. Firstly, it is concerned with the question of what constitutes learning in the context of work and how this relates to familiar views about learning within conventional courses. In discussing this question it offers some thoughts about the problematic issue of the transfer of learning and how to ensure that learning in a single context does not trap understanding to that context alone. Secondly, the paper considers the implications of this kind of learning for the role and identity of academics.

What is work-based learning?

While there are many uses of work placements in higher education courses, and there are many aspects of learning in workplaces, the view of work-based learning adopted here is that found in the increasing number of work-based learning partnerships. These are arrangements between educational institutions and external organisations specifically established to foster learning.

Work-based learning programs typically share the following characteristics:

1. Learners involved are employees of, or are in some contractual relationship with, the external organization. Learners negotiate learning plans approved both by representatives of the educational institution and the organization. Different learners follow different unique pathways.

2. The program followed derives from the needs of the workplace and of the learner rather than being controlled or framed by the disciplinary or professional curriculum.
3. The starting point and educational level of the program is established after learners have engaged in a process of recognition of current competencies and identification of the learning they wish to engage in rather than on the basis of their existing educational qualifications.
4. Learning projects are typically undertaken in the workplace. These are oriented to the challenges of work and the future needs of the learner and the organization. Learners are encouraged to locate resources to contribute to their learning wherever they might be found. Modules from educational providers or training courses offered elsewhere may be used as part of an overall learning plan.
5. The educational institution assesses the learning outcomes of the negotiated programs with respect to a framework of standards and levels. Such a framework is necessarily transdisciplinary.

The particular characteristics of work-based learning require a new focus on the notion of a course of study and ideas about learning which underpin it. This focus arises from the different relationship between learning and knowledge that exists in work-based courses relative to traditional university courses. This relationship prompts a reappraisal of the ways in which learning is viewed in a work-based learning context and necessarily on the ways in which a program of study is supported.

The following section aims to provide a basis for framing the work-based curriculum in terms of ideas about knowledge and about learning. After discussion of the challenges of learning while working and the different kinds of knowledge which might be explored in the curriculum, the question of how do we learn for situations not yet encountered is examined.

Learning and working: Tensions and synergies

The defining characteristic of work-based learning is that working and learning are coincident. Learning tasks are influenced by the nature of work and, in turn, work is influenced by the nature of the learning that occurs. The two are complementary. Learners are workers; workers are learners. They need to be able to manage both roles. The academy and the workplace need to operate together to ensure that they are not sending contradictory messages. The challenge for the work-based learning curriculum and those who support it is to ensure that the potentially mutually reinforcing nature of work-based learning is effectively utilized and that conflicts between the exigencies of work and learning are minimized. This can only happen if all the parties involved—learner/workers, workplace supervisors and academic advisers—are mindful of the potentials and the traps, and they are appropriately resourced in terms of the materials and expertise needed.

While work and learning may be coincident, they are not the same. In some circumstances they may be reinforcing to each other, but they have different goals and are directed towards different ends. Work is directed towards producing what the organization is in the business of offering, or some related output, whether that is a tangible product or a service, either now or in the future. Learning is directed towards the acquisition of knowledge or the capacity to gain further knowledge. The knowledge that is the object of learning may or may not be closely related to whatever the organization produces now or in the future. For example, there is always a need to orient new employees to their immediate work tasks and there is often considerable learning for them in this. However, most work-related learning involves development of knowledge of use in improving present practices or processes or in developing practices or processes for the future. It may even involve knowledge to be used to transform the organization and lead it to new kinds of activity. Learning may be directed towards immediate or to long term ends.

Learning and working often take place at the same location, and to the external observer the activities associated with each may not be easily separated. Many work assignments require employees to engage in learning before the work can be effectively completed. Such learning is an intrinsic aspect of work and may not be differentiated from it in the minds of worker or supervisor. However, this aspect of learning is not the focus here. Work-based learning typically emphasizes learning beyond the immediate and necessary requirements of work completion while drawing on the opportunities work provides. The employee takes on the additional and explicit role of a learner in the workplace and engages in activities that add to the normal work requirements of the position they hold. In many instances, activities of learning and working can be

shared. The workplace provides a kind of textbook from which the worker/learner draws their problems, complete exercises and assignments, some prescribed, some not. For example, in completing a work assignment, the reading for and writing of a report may well be of benefit to work outcomes as well as other learning outcomes that can be formally recognized. There are therefore potential savings of time and effort on the part of the learner in work-based learning compared to similar tasks in an entirely educational environment. Not all of these savings can be realized, as learning has additional demands of its own which may not be apparent to those new to work-based learning.

While they might share many interests in common, the roles of worker and learner do not necessarily sit easily together. When a worker is also a part-time student, there is a separation of activities in time and place that distinguishes learning from working. Classes may occur in the evening or at the weekend and course assignments are completed at home. In work-based learning, the activities of working and learning often take place in the same location at the same time. The learning involved is often multi-modal. There may be no sign that a shift from one mode to another has taken place. This can create additional tensions and an extra process for the work-based learner to manage.

Work-based learners are students, but they may not feel like students. That they do not attend an educational institution on a regular basis, if at all, compounds the feeling of identity ambiguity. They may not meet students other than those in their own workplace, who anyway are fellow workers. They do not follow an existing curriculum, and they do not sit examinations or complete set assignments. Many of the conventional attributes of being a student are absent. Learners have to manage their work and learning without the conventional boundaries that exist between them. They may even occupy the same physical space. Learners also have to manage the shift of identity from worker to learner and back again. They may not have the opportunity of being able to devote themselves single-mindedly to one or the other role, especially the learning role. They may have to explain to co-workers and supervisors what they are doing and why, and deal with the feelings which attending to learning in the workplace and the comments of others may provoke. All this can be managed, but the challenges are not necessarily obvious to the new learner. They also raise the aforementioned question of identity: is the work-based learner really a bona fide student or some type of hybrid student cum worker?

Learning challenges

What knowledge constitutes the work-based learning curriculum?

Even though subject matter knowledge may not be the defining characteristic, the work-based curriculum must take into account a view of knowledge. Learning always has an object of attention. It is learning about something. It cannot be separated from knowledge either in the general or local sense. What perspectives on knowledge need to be considered in developing the work-based curriculum then?

A basic assumption of work-based learning is that knowledge is generated through work. All workplaces are potentially sites of knowledge production in similar ways that universities and research institutions have traditionally been thought of as sites of knowledge production. Different workplaces will be differentially generative of knowledge production depending on the nature of the work undertaken and the particular expectations of productivity, which are placed on those who work there. These include the nature of the enterprise as well as the extent to which

- work follows standard patterns and routines,
- the organization understands and represents its own knowledge,
- employees are given scope to exercise initiative to transform the nature of their work and that of others,
- there is freedom to pursue goals beyond those required for current work output.

The kinds of knowledge generated in workplaces may differ greatly from that generated and sustained by academic institutions. Knowledge production is driven by different imperatives. Different knowledge may well be valued in different sites. One way of contrasting the distinction between the kinds of knowledge valued in universities and that of other settings has been elaborated by a number of recent commentators. Gibbons et al (1994) are among the most prominent of these and they describe two modes of knowledge production:

in Mode 1 problems are set and solved in a context governed by the, largely academic, interests of a specific community. By contrast, Mode 2 knowledge is carried out in a context of application. Mode 1 is disciplinary while Mode 2 is transdisciplinary. Mode 1 is characterized

by homogeneity, Mode 2 by heterogeneity. Organizationally, Mode 1 is hierarchical and tends to preserve its form, while Mode 2 is more heterarchical and transient. Each employs a different type of quality control. In comparison with Mode 1, Mode 2 is more socially accountable and reflexive. It includes a wider, more temporary and heterogeneous set of practitioners, collaborating on a problem defined in a specific and localized context. (1994: 3)

When they developed these distinctions Gibbons and his colleagues were focusing on research and did not appear to have in mind the kinds of work-based learning discussed here. However, such an analysis is helpful in identifying ways in which knowledge may need to be treated differently in work-based courses relative to disciplinary-based elements of which many university courses are constructed.

The focus of work-based learning is on the knowledge of practice, on what is needed to understand and develop the activities of particular work sites. The knowledge requirements and the knowledge outcomes of work-based courses will not necessarily coincide with those of disciplinary courses. This does not imply that Mode 1 knowledge is irrelevant to work-based learning, but that it may be subordinated to other more pressing agendas. A work-based learning curriculum will not necessarily incorporate elements of existing university courses, although in many circumstances where these courses do provide for the kind of knowledge development needed for particular desired outcomes, they are included.

One of the major challenges of the work-based learning curriculum is how to reconcile the Mode 1 knowledge of the university and the Mode 2 knowledge of the workplace in ways that do not place an unrealistic burden on the individual learner. Academic advisers will typically be drawing on their background of Mode 1 knowledge while workplace supervisors or advisers will be drawing on their understanding of Mode 2 knowledge. What Mode 1 knowledge they possess will be overtaken by the exigencies of work. While much of the vocabulary may appear to be the same, they will not necessarily be speaking the same language. This means that there is a particular need for all parties to be explicit about what they are bringing to the encounter and what this offers to the person availing themselves of the learning opportunity provided jointly by their organization and by the university.

Of course, knowledge derived from the university part of the work-based learning partnership is neither all Mode 1, nor is it only available wrapped up in standard course units. The university provides knowledge of learning and how it might be promoted. It provides access to an enormously wide range of expertise in many areas. It also has knowledge of knowledge acquisition over a wide range of fields of inquiry. Conventionally it has been assumed that access to such knowledge can only be gained by enrolling in standard units available in undergraduate and postgraduate degrees. However, this assumption will be increasingly tested. Universities will have to find ways of 'disaggregating' their courses and making them available in different ways and in different combinations as they move towards accepting the need for flexibility. The unit of study takes on a different complexion when it is not a part of a wider disciplinary framework. Additional items may need to be included and others removed when it is used in different ways and for different purposes. It is extremely unlikely that it will end up as being of the same magnitude of existing units that owe more to the amount that can be covered in weekly classes in a standard semester period than to any intrinsic features of the knowledge domain. Smaller size, self-contained elements, well documented, will be needed.

Work-based learning: beyond the present and the particular

Not only do new forms of learning and work require us to focus on what constitutes knowledge; they also require a new look at the notion of learning. When students are engaged in work-based learning, what are they actually learning? They are not learning existing knowledge from a standard curriculum. They are not engaged in research in the sense that someone undertaking a PhD is engaged in original research (unless perhaps they are engaged in doctoral level work-based learning). They are not learning how to do their existing job, though they may well be extending their present work. For the most part what they are doing is equipping themselves to be continuing learners and productive workers through engagement with tasks that extend and challenge them, taking them beyond their existing knowledge and expertise. Such continuing learning requires a fresher view of learning than that hitherto promoted in higher education.

Over the past twenty-five years or so there has been a transformation in understanding of student learning in higher education. A research base has been established where none existed previously and there is now a body of work that speaks directly to the concerns of academics. The most influential of this research has been that on qualitative conceptions of knowledge. This has been associated with the tradition of phenomenographic research associated with Marton among others (Marton, Entwistle and Hounsell 1996).

In recent years Marton and his collaborators have moved on from their earlier view of phenomenography to a concern with a topic which lies at the heart of all education, that of what does it take to learn? (Marton and Booth 1997; Bowden and Marton 1998). In particular they confront the fundamental problem of how can we learn in a way that enables us to deal with unknown situations. While they use this problem to explore curriculum and teaching issues for all university courses, their thinking is especially applicable to work-based learning. The reason for this is that in work-based learning most situations are unknown. Not only are they unknown to the learner, but unlike in conventional courses, they can also be unknown (at least in part) to their supervisors and advisers. The two features of Bowden and Marton's solution to the problem of learning for unknown situations are; first, to focus on discerning aspects of situations that vary from others and, second, to integrate disciplinary and professional frameworks of knowledge. The first of these is less apparent, but it is probably of greater significance for work-based learning.

What do they mean by discerning aspects that vary and why is that important? They argue that one of the problems with existing curricula and approaches to teaching is that students are expected to focus on a particular issue or problem and practice solving it until they become expert. They then move on to another issue or problem type and repeat the process. When they are faced with a new issue or problem they try to decide which of the approaches in which they are expert is appropriate. When they find that it belongs to none of the sets they know, they don't know how to approach the problem. They have no experience in deciding what the problem is. In order for them to gain such experience, they must be exposed to novel situations with different kinds of problems. The important element that Bowden and Marton (1998) have added to this analysis is that students should go on to work out just what the problem really is. It is the understanding of what the problem really is which is the key to learning for the unknown.

Understanding what the problem is involves students in noticing the variation between one situation and another. They are required to draw on various aspects of their knowledge to make sense of and account for the particular features of the problem or issue with which they are confronted. Students learn variation by noticing differences in different problem situations. By comparing and contrasting these, they come to focus on salient features that will enable them to address the new problem. In this way of looking at learning, it is not just the solving of the problem which indicates learning, but the development of an appreciation of what was actually learned. Students need to stand back and reflect on their learning in order to understand what it is that they have learned which goes beyond the specifics of the situation in which they find themselves. It is this aspect of learning that enables them to face new situations with equanimity.

The second of Bowden and Marton's (1998) solutions to learning for unknown situations is the integration of disciplinary and professional frameworks of knowledge—Mode 1 and Mode 2 forms of knowledge. This is important for work-based learning, but potentially more problematic as work-related frameworks of knowledge are generally underdeveloped, not well documented and certainly little analysed. Also, existing disciplinary knowledge frameworks are rarely constructed in ways that link directly with working knowledge. In particular, the ways in which disciplinary knowledge are represented in the conventional curriculum may not be accessible to those who have not progressed through a conventional disciplinary education. There are substantial challenges in making existing course units available within a work-based learning framework as Mode 1 and Mode 2 knowledge may be qualitatively different and unable to be translated from one to another. It is easier to imagine a dialogue between disciplinary and professional frameworks within a conventional course, than in a work setting. There are a number of reasons for this. First, there is a degree of control and standardization of the curriculum possible within an academic framework. This means that work-based knowledge becomes subordinated to disciplinary knowledge. Second, there has been substantial dialogue between disciplinary and professional knowledge within universities, in some cases over very long periods of time. Traditional professions, such as law and medicine, have been represented in universities over many centuries and, while there have been tensions between academic and professional knowledge, both now are subject to research as the development of professional expertise is explored systematically. There is no equivalent investigation for most domains of work-related knowledge outside defined professional areas—though this is changing particularly in areas such as nursing and teaching.

This does not imply that there should not be closer integration between disciplinary and work-related knowledge, but that this remains to be undertaken. There is a need for new conceptual frameworks useful in interrogating Mode 2 knowledge. This is a prerequisite for the kinds of integration envisaged by Bowden and Marton (1998). There are for example many aspects of post-structuralist theory that can be deployed to this end, including Foucaultian analysis that can illuminate the power/knowledge dynamics of work settings (See

Gore 1997; Rose 1990). However, by and large, there has been little systematic analysis of the kinds of conceptual and theoretical work of value for work-based learning. This is likely to be a fruitful area of research necessary for the further development of work-based learning.

Beyond the particular

A particular challenge for the work-based curriculum is the danger of trapping learners' understanding within their own work setting. That is, learners may well learn how to improve their immediate practice, but, constrained to that environment, they will be unable to move beyond it. Their understandings and working knowledge becomes over-localized and cannot transcend the present and the particular. While this is an issue of much broader significance, in work-based learning strategies for addressing it must be found if recognition of learning beyond the organization is sought.

Bowden and Marton's (1998) suggestions can also be used to address the problematic issue of the transfer of learning. That is, how can we ensure that students can apply their learning in situations other than the ones in which they developed it? The conventional way of phrasing this is how can transferability of learning beyond the workplace be enabled? However, Bowden and Marton argue, following Smedslund (1953), that transfer is not needed as a concept. As they put it:

Anything you learn, you must make use of in other situations. You can never re-enter the very situation, which gave birth to learning. Transfer is involved in every instance of learning; questions of transfer are simply questions of learning. And, if so, you do not need the concept of transfer of course. It is redundant. (1998: 25)

They also challenge the framing of the problem in terms of transfer:

Sorting situations into two categories—learning situations on the one hand and situations of application on the other—seems hard to defend. Every 'learning situation' includes the potential for application (of something learned previously) and every 'situation of application' implies the potential for learning (something new). (1998: 25)

The difficulty that the notion of transfer seeks to address is still an important one. They suggest that the idea of variation is sufficient to deal with the problems that 'transfer' was invented to deal with. They focus on the importance of the differences between situations of various kinds:

There are differences between situations within educational institutions (this is one form of variation), there are differences between situations outside educational institutions (another form of variation) and there are differences between the two classes of situation (a third form of variation). Interesting issues are the extent and nature of these different sorts of variation, and the possible relationships between them. (1998: 26)

Bowden and Marton thus shift the attention away from the notion of 'application' towards that of exploring the variations that exist in the objects of study and the relationships between them. It is only through experiencing variation in learning, discerning different sorts of variation and being able to draw upon this variation in new settings, that learners can successfully approach new problems or issues. This implies a greater emphasis on students appreciating what they are learning and what they have learned at the time of their learning. They need to disembed their knowledge from the particularities of context in which it was learned so that it is available for use elsewhere (Donaldson 1978). In the work setting this will often involve an additional step beyond that needed for the immediate use of that knowledge. Developing an awareness of their learning is a necessary step that must be incorporated explicitly into the work-based curriculum. Such an emphasis helps address the criticism of work-based learning that it lacks the feature of providing a 'critical distance' in the development of professionals, that is, that it does not enable learners to perceive what they are learning separate from their immediate context.

In terms of the language of approaches to learning, students must necessarily have engaged in a deep approach to learning if they are likely to be able to use their knowledge in a new situation. While there may be more potential for them to do so in the relevant and meaningful context of the workplace, many pressures to cut corners and not fully process their learning are present also. Work-based learning in itself does not of course guarantee that a deep approach will be adopted.

While Bowden and Marton (1998) focus on what they term disciplinary and professional knowledge, they do not address the challenges of Mode 2 knowledge directly. They also draw most of their detailed examples

from relatively simple science contexts. Professional knowledge has already undergone some degree of codification compared to the wider range of Mode 2 knowledge, and discerning variation is more demanding the more complex the situation considered. Nevertheless, their work provides the most useful starting point so far in dealing with the learning challenges of work-based learning.

Identity challenges

One of the other major challenges of work-based learning is that to the identities of academics. When work is the curriculum, the reshaping of concepts of knowledge and learning is accompanied by a parallel reshaping of their identity. This section briefly focuses on academics' engagement in work-based learning and the different 'subject' positions they take on. The use of the word 'subject' is deliberately ambiguous. It refers to what it is being learnt/taught as well as to the new role and expertise (and tensions around these) of academics as they are 'subjected' to the various disciplinary practices of both the university and workplaces (Usher and Solomon 1999).

It is important first to say that we believe that the current challenge to traditional notions of academic identities is not confined to this kind of curriculum. The closing of the conceptual and physical space between contemporary universities and other organisations together with changes in government funding arrangements have had an enormous impact on academics. This relates to the way universities are redefining themselves, in terms of their identity as educational institutions, their relationships with other universities and industries, their understanding of the composition of target markets and much more. While these redefinitions are constantly unfolding, one sustaining feature is a set of discourses that construct higher education as an industry, that is, as a business involved in the commodification and marketisation of education. The university, as only one player in this industry, located at the heart of the blurring of educational and non-educational discourses, is being constructed as a workplace. Such a construction is reflected through the entry of discourses of management into the management practices of the university. The 'mission statement', 'strategic planning' and 'quality assurance' have a remarkable resemblance to those of other corporations. Previously workplaces were of interest to academics mainly as sites of research or as the destination of their students. Workplaces were 'other'. However in the contemporary university, while there are likely to be many sites of resistance and struggle to the corporatisation of the university, management practices in the university and the everyday work practices of almost all academics, mean that it is difficult not to experience the university as a workplace. While, of course, academics literally have always 'gone to work' in a 'workplace', conventionally, the subject position of academics has been constructed by disciplinary practices associated with expertise in knowledge and curriculum structures rather than organisational imperatives.

Furthermore to complicate the effects of managerialism on academics, in work-based learning awards, where work is the curriculum, even their expertise in a disciplinary knowledge area is troubled. Their work practices require a different expertise signalling a shift from an identity shaped by a particular disciplinary area and the academic community more generally. In this context, the identity of academics is influenced by a new role in the learning process—one of facilitator or expert in *learning* rather than an expert in a disciplinary body of knowledge. This is disturbing to those who construct their identity through their academic or professional discipline. Moreover, as discussed above, the knowledge produced in work-based learning is often very specific to its context of application. This is contrast to a perceived 'universality of knowledge' produced within a university. This contrast encourages a more explicit scrutiny by disciplinary communities. Indeed work-based learning often comes under the microscope by academics suspicious of the consequences of work-based learning programs.

Simultaneously the academic is subjected to a considerable amount of regulation by the participating organisation. From the organisation's perspective, during the program the academic is 'one of them'. They find themselves also working within the rules and regulations of the company—many of which are inconsistent with those of the university.

The academic is therefore working at the intersection of two sites of regulation (the university and the organisation). This can result in a considerable amount of tension for the academic, whose identity is no longer clearly defined by the boundaries of any one institution. It is not surprising that academics are confused about their role and identity. On the one hand they can be asked, for example, to ensure that the individualised work-based projects of the learners in a work-based learning program add value to the company's productivity goals. On the other, at the same time in university forums, they are frequently challenged about the academic merit of these individualised programs.

Conclusions

This paper has suggested that a focus on work-based learning requires rethinking about how learning is conceptualised and programs of study organised as well what constitutes academic expertise. Work-based learning does not arise from the disciplinary frameworks in which knowledge has been traditionally ordered within the university; in many instances it exemplifies more local knowledge, flowing from the particular spatial and temporal circumstances of work contexts and situations. In the traditional university this knowledge was spurned, and the catchcry was to go beyond the present and the particular (Bailey 1984).

Work-based learning celebrates the pedagogic significance of the particular and the present. As has been argued earlier, this could limit its transferability and trap the work-based learner in degrees that have a very limited shelf life. However new theories of variation, most notably those espoused by Bowden and Marton (1998), could redress this, and offer the prospect of work-based learning being codified at source in such a way as ensure that such learning transcends the present and the particular. Whether this occurs or not depends on developing a pedagogy for work-based learning, a topic beyond the scope of this paper.

This focus on what constitutes learning is reflected in the construction of the identities of academics who become involved in work-based learning. Not only do they face threats to their traditional identity as 'subject experts', but they face the discomfort of having to develop new expertise as 'learning experts'. The implications of work-based learning are far more profound than a description of the practice might lead one to expect.

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WORKING TOWARDS A CURRICULUM FRAMEWORK FOR WORK-RELATED LEARNING

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Introduction

This paper presents a curriculum framework for work-related learning. It begins by arguing contemporary vocational education and training in Australia is too narrowly conceived, instrumental, derived from technicist notions of work, corporate in a number of senses, hegemonic and undemocratic. The paper advocates for the recognition of a broader and more encompassing conception of work-related learning.

The first section argues to move beyond VET and instead posits a broad, socially inclusive and democratic conception of work-related learning. The second section outlines a critical postmodern curriculum theory. This brings together strategic aspects from both critical theory and postmodern / poststructural theories. The third section applies this critical postmodern curriculum theory to the development of a curriculum framework for work-related learning. Kincheloe's critical postmodern pedagogy of work stands as a model for the current project.

Work-related learning, and by implication the curriculum framework, is designed to overtly recognise power relations commonly associated with sociological studies of work. Harriet Bradley (1999) has developed an analytical model to understand the complexities of the workplace dynamics of gender, class, ethnicity and power. This model is explored. Next the ideas associated with 'complimentary holism' are investigated, (Albert, Cagan, Chomsky, Hahnel, King, Sargent, & Sklar, 1986). Complimentary holism offers a means by which society can be analysed as four inter-related spheres. These cover the areas of economics, politics, community and kinship. Interestingly, those that formulated complimentary holism did so for the purpose of encouraging the development of alternatives to existing circumstances and arrangements. They described this as 'an activist's theory for societal change'. Finally, four vignettes are provided which correspond to each of the four spheres associated with complimentary holism.

The resulting framework is considered appropriate and useful for the organisation of knowledge and for guiding curriculum development efforts. The framework remains tentative and is open to further development through collaborative processes. In terms of productive knowledge, the framework goes beyond what is considered productive in terms of neoclassical economics, to what is argued to be productive in the sense of fostering active citizenship, human agency, and participatory democracy.

From VET to work-related learning

Smith and Keating (1997: 3), describe VET as 'an international term that describes the development and improvement of skills and knowledge for the specific purpose of improvement in an individual's capacity in productive work'. Some ideas from John Stevenson (1994:11) assist in understanding how curriculum development in VET achieves this aim.

First, Stevenson explains that curriculum development includes both curriculum design and curriculum implementation. This definition is useful in that it highlights the division of labour that occurs within the VET curriculum development process. One group of project workers are involved in doing the research and development work leading to the design of the curriculum, while another group, consisting of teachers and trainers, is involved with the practitioner's side of curriculum development. Importantly, the initial stage in the VET curriculum design phase involves conducting an analysis of a job. This is usually documented as competencies. Under a reproductive approach to curriculum, these competencies become the intended outcomes to be achieved when the curriculum is implemented.

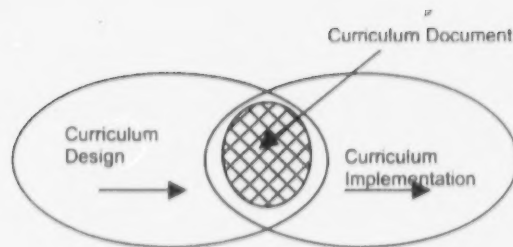


Figure 1: This is a graphical depiction of Stevenson's definition of curriculum development.

Next, Stevenson explains that VET curriculum development is governed by three principles. These are relevance, responsiveness and uniqueness. First, VET courses are relevant in that they are based on the current requirements identified and agreed to by employers. Employers as the purchasers of labour in the exchange transaction that occurs in the labour market are a major stakeholder in VET. VET courses set out with the primary aim of developing the skills, knowledge and attitudes that employers deem to have value on the labour market and which employers are prepared to purchase and reward through the remuneration of wages. In this way, VET programs can be described as imparting 'market driven knowledge' or 'valuable' knowledge, (Brown 1999 & 2000).

Second, VET is responsive in that it addresses the skills and knowledge 'demands' of employers and of the market. The relevance and responsiveness of VET courses give them utility and usefulness. Third, is the principle of uniqueness. This has become more problematic in recent years. Although no other sector of education systemically hands over such important determinations about knowledge, curriculum and pedagogy to employers and corporate interests.

Amongst the advantages of VET is that it offers participants in these courses some assurance and accountability that the VET qualifications when completed will be matched to the current and specific requirements of a job. In theory, participants in VET courses develop the capacities that employers want and are willing to pay. Therefore, graduates in VET courses are assured that the competencies developed through the course will have utility and value in the labour market.

However, turning the selection and determination about knowledge over to employers also constitutes a major weakness. The major objection is that it subordinates the interests of the worker/learners to the interests of employers. This places the determination of what constitutes 'useful' knowledge for working people into the hands of employers. Likewise, the determination of knowledge gets left to managerial prerogative and the market, (Brown 1999). This can be considered contrary to the longer term and broader interests of the learners. Therefore, a critique can be developed which argues that VET programs are narrowly focused, instrumental, technicist, corporate, undemocratic and hegemonic, (Brown 2000). Subsequently, it is argued that a new conceptualisation with a broader scope than contemporary VET is required. This constitutes the more general and inclusive notion of work-related learning.

Work-related learning

Work-related learning is a broadened notion that includes all the learning that occurs in relation to work. This incorporates learning *for* work, and learning *about* work. It includes all aspects of work paid and unpaid. It includes work that is done in workplaces and work done at home and in the community. It includes all the formal, informal, non-formal and incidental learning associated with work.

The significant point is that there are many important aspects of work to be systematically considered and learnt - beyond productive skills and beyond performativity. In its simplest form, work-related learning is an umbrella term that encompasses as legitimate curriculum content worker/learners considering the debates often associated with work and workplaces but from which working people are usually excluded. Work-related learning as an emerging field also offers an educational and learning space for consideration of more democratic forms of work. Work-related learning can become a space for collective collaborations and the creation of alternative democratic visions of work and political economy.

As work-related learning includes the relations of doing work, then it is necessary to find ways to assist in analysing and understanding workplace power relations. For this, the work of Amott & Matthaei (1996) on race/ethnicity, gender and class, historical moment and location can be reviewed. These authors after

researching the multicultural economic history of women workers concluded that women throughout the USA have not experienced a common oppression as women. Therefore the analytical framework that these authors developed focuses on ways in which race-ethnicity, class and gender relations combined to structure women's working lives, on the transformation of these relations over time with the development of the capitalist economy and the continuing process of struggle against oppression. This study makes an excellent prelude to the more recent work of Harriet Bradley (1999).

Over the last fifteen years, Harriet Bradley has been researching contemporary workplaces in Britain and been attempting to understand workplace dynamics and power relationships. Bradley has been one of many who have attempted to make sense of the overlapping dynamics of class, ethnicity, gender and age. She sets out to explore patterns of relations between men and women tracing out continuities as well as changes, (Bradley 1989, 1996 & 1999). Bradley places these changes within the context of capitalist development. Her work demonstrates how these processes combine to produce hierarchies of gender and class power within workplaces.

Bradley's analytical framework represents a hybrid conceptualisation of social theory that allows space for more complex conceptualisation of class, gender, ethnicity, and power. Importantly, her framework evolves from and is grounded in research and analysis within actual workplaces. Bradley, like Amott & Matthaei, recognises that these workplace dynamics are historically and contextually situated or bound.

Bradley's work sets out a model for the analysis and understanding of gender and class along with a resource based account of power. This allows for the exploration of material and cultural elements while also offering a means to link structure and action, the global and the local. As workplace power relations are an important aspect of doing work, attempts to understand and learn about these becomes an integral part of work-related learning.

Towards a critical postmodern curriculum theory

This section attempts to construct a critical postmodern theory of curriculum. Kress offers a starting point for these endeavours when he explains,

Curriculum is a design for the future. That is its most crucial characteristic, among many others. A curriculum provides, even if entirely implicitly, the knowledges, the principles, and the modes of thinking, the possibilities of action which form the stuff with which, around which, and out of which people can, if they wish, make themselves as social subjects. A curriculum projects a vision of the future, and it is that aspect which forms the basis for the examination of present curricula, and of any changes and reforms which are proposed. Gunther Kress (1995: 9) as cited in Bradshaw (1999:1)

A critical postmodern curriculum theory derives from four main influences. The first comes from the new sociology of education movement and the second from critical theory. The third is derived from postmodern / poststructuralist theories and the fourth is more specific as it draws from Joe Kincheloe and his notion of a critical postmodern pedagogy of work.

Michael Young (1998: 43) recently wrote about the work he did in the early 1970s,

... the most important contribution of the 'new sociology of education' was to make the processes of selection and exclusion of knowledge, both in the classroom and in the wider society, the central topic for the sociology of education.

Others like Michael Apple, have also done work in this vein asking fundamental questions about 'which knowledge' and 'whose knowledge' is to be included or excluded from curriculum and why? Following this, Henry Giroux and Peter McLaren have applied aspects of critical theory to the pedagogy of Freire and developed 'critical pedagogy'. In regard to curriculum, Michael Young explains that what makes a 'critical' curriculum theory is that it attempts to foster both understanding and change.

Kincheloe has already begun to make the argument for, and describe the hybrid notion of what constitutes the double qualifier of 'critical postmodern'. He states,

the synergism of conversation between postmodern critique and critical theory involves interplay between the social commitment of the critical and the radical uncertainty of the postmodern, (Kincheloe 1995: 48)

In many respects this 'synergy' is a controversial concept though others are also beginning to work in this way, (Apple 1996 & 1999). Simon Marginson's (1997) development of the idea of power/knowledge/economy and Dennis Carlson & Michael Apple's (1998) use of the term power/knowledge/pedagogy stand as immediate examples. Further to this, Kincheloe (1995) writes,

when postmodernism is grounded in critical theory that is concerned with questioning knowledge for the purpose of understanding oneself and one's relation to society, naming and then changing social and economic situations that impede the development of egalitarian democratic communities marked by a commitment to economic and social justice and contextualising historically how world views and self-concepts come to be constructed, postmodernism becomes a powerful tool for progressive change.

Towards a critical postmodern curriculum framework for work-related learning

The three main contributions to this section of the project are drawn from Joe Kincheloe's 'critical postmodern pedagogy of work', (Kincheloe 1995 & 1999); Delia Bradshaw's four key principles as articulated in her conceptual framework for further education, (Bradshaw 1999); and Albert et al's (1986) conceptualisation of complimentary holism. This set of four ideas are utilised and applied to the development of a curriculum framework for work-related learning.

A critical postmodern pedagogy of work

Joe Kincheloe (1995 & 1999) has begun to describe a critical postmodern pedagogy of work. This paper owes much to the thinking expressed in Kincheloe's work. A critical postmodern pedagogy of work addresses the political, economic and social realities that shape schooling for employment and the conditions that produce the students who are affected by it. This pedagogy escapes from the technicist constructions and this leads to realisation amongst critical educators that conceptualisation of a critical work education involves creation of a political vision, a vision grounded on a re-conceptualised democratic ideal, (1995:58).

Simon, Dipbo and Schenke (1991) have developed a critical pedagogy of work education, they argue that such an approach has to challenge comfortable taken-for-granted assumptions. Amongst the assumptions that Kincheloe argues need to be challenged is the penetration into workplaces of the discourse of scientific management. This pedagogy would teach worker/learners how to evaluate work, how to evaluate faults and contradictions in work situations. Another is the influence of the discourse of neo-classical economics and the economy as an automatic apparatus. Kincheloe suggests that a critical postmodern pedagogy of work would begin to develop a new economics. Hence a new economic form would critique the pseudo-efficiencies of the free market philosophy and begin to develop alternatives.

Critical educators would understand that self esteem, community standing and major aspects of identity formation can be bound up with work. They would therefore need to work with students to create a more democratic form of knowledge that promoted worker respect and dignity. Notions of diversity and solidarity are important to this approach. This approach would assist worker/learners to understand the nature of their work and how it relates to broader social, cultural, economic and political contexts. They could then begin to rewrite the meaning of their work and this struggle to rewrite becomes part of a larger struggle for social and economic justice. Kincheloe argues that such approaches develop worker/thinkers. Clearly the form work and workplaces take in the future is a collaborative construction to be thought through by those that are most involved, namely the worker. Such a project could be facilitated through education and learning programs.

Bradshaw's four principles for a conceptual framework for further education

Delia Bradshaw (1999) has compiled a document that describes a conceptual framework for further education. This has much to offer work-related learning. She suggests the use of four principles these are multiplicity, connectedness, critical intelligence and transformation. It is envisaged that these would align and blend in significant ways with the ideas of Amott & Matthaei (1996), Bradley (1999), Kincheloe (1995 & 1999) and the complimentary holism of Albert et al (1986).

Complimentary holism and its application to work-related learning

Albert, Cagan, Chomsky, Hahnel, King, Sargent, and Sklar (1986), explain that complimentary holism is a theoretical framework that assists people to,

- (1) begin to analyse society in order to understand where we are at the moment;
- (2) develop alternative aims and visions for society; and,
- (3) develop strategies for moving from where we are, to where we want to be.

Complimentary holism is so called as it attempts to take a holist view of society. These are presented as four spheres which are, community, kinship, economics and politics. Complimentary holism requires that each of these spheres be explored for their main themes and concepts and that their inter-relationships across and between the other spheres need to be examined. Within the curriculum framework being advocated concepts and themes drawn from each of these spheres can be considered in relation to how these might impact and influence the field of work-related learning. Major focuses within the community sphere are ethnicity, culture and intercommunalism. For the kinship sphere, major concepts to be explored are feminism, patriarchy, sexuality, a range of family relations and feminist kinship. The political sphere involves exploration of self-management, and radical and participatory forms of democracy. Significantly, Bradley's analytical framework, which looks at ethnicity, gender, class and power, align directly with the four spheres of complimentary holism.

The development of each of the spheres and the application of appropriate concepts to the field of work-related learning is by necessity a collaborative project. Under the logic of developing a self managed people-centred society, the principle is that those that are effected by a decision need to be involved in making the decision. However, having said that the following section provides an overview of how Albert & Hahnel (1991a & 1991b) have proceeded to further develop the sphere of economics. As can be seen, the economics sphere has a great deal to do with work and stretching this to work and learning is not too much of an extension. To suggest that economics, work and learning are easily connected has much in common with the concept of power/knowledge/economy as used by Marginson (1997: 12), which he describes as being about power and politics, knowledge and economic production.

Participatory economics

Michael Albert & Robin Hahnel (1991a & 1991b) and Albert (1994 & 1997) have begun to develop the economic sphere of complimentary holism. This stands as an example and model showing others how these spheres might be developed further as much as it stands as an alternative form of political economy. Albert & Hahnel have worked at this for over a decade developing and facilitating developments to what they call the Parecon project. Parecon is an acronym that is derived from the term 'participatory economics'. Albert & Hahnel have been very critical of neoclassical economics. One aspect of their criticism is aimed at the way that neoclassical economics labels the effects that its policies, strategies and practices has on people as 'externalities'. Using their critique as a base they have developed a contrary approach theorised from the point of view of 'people-centred economics'. Interestingly, the project of advocating for work-related learning bounces off a critique of VET in a similar manner.

These authors describe complimentary holism as part of a process for developing a humanist vision and acknowledge that it is very value-laden. Albert & Hahnel (1991b) and Albert (1997: 25) explain that the broad values and goals, which they aim to enact and develop are equity, solidarity, diversity, and participatory self-management plus efficiency and, by implication - classlessness. In their own terms they explain that an economy is a set of institutions that facilitate and organise people producing and consuming goods, services and information. Chomsky (1988), a member of the above project, though not always in total agreement has argued,

... The task for a modern society is to achieve what is now technically realisable, namely, a society which is really based on free voluntary participation of people who produce and create, live their lives freely within institutions they control, and with limited hierarchical structures, possibly none at all...

Noam Chomsky (1988)

Under their conception of participatory economics, work is carried out under the democratic arrangements of workplace councils using one person one vote. Albert & Hahnel (1991b) explains that there is no fixed hierarchy and that each worker has,

- a list of comparable job tasks and responsibilities;
- a fair share of both desirable and not so desirable things to do;
- comparable responsibilities and opportunities, and
- been equally prepared to participate in decision making.

In regards to consumption, the consumers,

- roughly receive equal shares of the social produce;
- must make a reasonable attempt at predicting their consumption in advance;
- are entitled to one person one vote and collective goods are chosen by consumer councils,
- enact equity and self-management practices.

Participatory planning in the new economy is a means by which worker and consumer councils negotiate and revise their proposals for what they will produce and consume. All parties relay their proposals to one another via 'facilitation boards'. In light of each round new information is generated after which workers and consumers revise their proposals in a way that finally yields a workable match between consumption requests and production proposals. The system rests on a comprehensive exchange of information, (Albert & Hahnel 1991b: 12-13).

The other three spheres of complimentary holism, namely, community, kinship and politics wait to be developed by others following similar principles to that of participatory economics, foregrounding democratic values with a general aim of achieving a people-centred society. This task of elaboration and articulating an appropriate vision remains a collective responsibility, one that might be explored further through collecting and analysing a wide range of vignettes. To begin to give a sense of such endeavours four such vignettes are provided below. Each vignette provides an example of work (and learning) that corresponds to a sphere in complimentary holism. Questions arising from these are presented in the conclusion.

Four vignettes

Working within the community: the Wyndham adventure playground

Wyndham lies on the western outskirts of Melbourne. It is a multicultural and mostly working class community of 77,000 people. In March 1996 a community-based committee was set up to plan and build an Adventure playground. By April the Council had approved the selection of a site at Presidents Park. The committee continued its work establishing a further eleven sub committees. These focused on planning, promotion, obtaining funding, sponsorship and the necessary building and support materials, along with provision of catering, childcare and first aid during the building phase.

Prior to the holding of 'a design day' some twenty-four Primary schools were contacted and students were encouraged to draw or build models of their ideal playground. The design day was held in May and a representative of the US based design company, 'Leathers and Associates' gathered ideas from 120 students. In June the committee received the first draft of a schematic of the design.

The construction phase was overseen by two consultants from 'Leathers & Associates' and a Melbourne based builder. On Monday the 17th February the site was pegged out and holes for some 180 structural poles were drilled. Tuesday the 18th marked the beginning of the work of some 2000 volunteers on the site. The volunteers were organised into three shifts. The first worked from 7.30 am to noon, the second from 12.30pm until 5pm and the third from 5.30pm until quitting time at about 8.30 or 9pm. On Sunday the 23rd Feb after eleven months, and at a cost of \$200,000, (though having a replacement value of \$800,000), the adventure playground was completed.

Work and kinship: Childcare and family friendly workplaces

The ABC childcare Centre Limited is a not for profit centre that has twelve employees. It is a small organisation that has shown understanding of the specific needs of its staff establishing processes and an environment that enables it to retain its staff. It has a very low turnover rate and some employees travel long distances to work there. Similarly, it has recorded very high levels of satisfaction amongst its clients.

This centre has put in place a number of important family friendly measures. Amongst these are, that staff can use the facilities for their own children and it allows rostered days off to be accumulated and used at the employees discretion. Staff have easy access to phone and fax for their personal use and the centre utilises flexible hours in a creative manner that are of benefit to the staff and clients alike.

Work, unions and political organisation: La Coordinadora

La Coordinadora is a union of Spanish longshoremen. Throughout the 1980s this union attempted to work in a different way to most other unions. It practiced radical democracy based on a unique combination of three principles. These were,

- (1) Hiring hall rotation: There was no group of unemployed waterside workers in Spain as the union had control over hiring and every docker participated. The union established a system of hiring that shared out all the available work equally.
- (2) Industrial unionism: During the 1980s, La Coordinadora was Spain's only industrial union. At one stage they had 80 per cent support throughout their industry sector. The union in each port acted autonomously and the union operated as a loose network.
- (3) Spanish style Anarcho-Syndicalist assemblyism: General assemblies made important decisions and elected delegates had no power other than to carry out their mandate. Any docker could attend meetings with the ultimate power resting with the assembly. Accepting election as a delegate meant volunteering to do a great deal of unpaid work for the union.

These principles resulted in one of the most democratic labour organisations anywhere in the world.

Work and economics: Grasslands Grocery and Information Café

Grasslands is an organic grocery shop and information café located in Footscray. Grasslands is a co-operative that is run by four friends. This group has been actively working on a paid and unpaid basis as human rights and legal sector advisers. Around 1996 they decided to come up with an innovative and ethical means of raising funds so that they could fund social and political projects. In their own words, 'they were sick and tired of seeing community groups sell their independence, principles and vitality for the promise of funding'.

The shop opened in April 1999 and sells organically grown fruit, vegetables, nuts and environmentally friendly soaps and cleaning products. Of every dollar that is spent in the shop, 57 cents goes on the wholesale cost of the product, 26 cents goes towards the cost of getting the product to the customer, and 17 cents gets spent towards projects and donations. After eighteen months of operation this non-profit organic grocery has donated more than \$30,000 in produce or cash to a broad range of community groups.

Conclusion

The main purposes of this paper is to begin the process of articulating a curriculum framework for work-related learning. The theoretical basis for such a project is described as a critical postmodern curriculum theory for work-related learning. The aim of the project is to devise an approach to curriculum that will organise and facilitate a means by which worker/learners can begin to, analyse, understand and critique existing power relations, and to formulate alternative visions for people centred societies. This needs to occur in tandem with efforts to facilitate the processes for making judgements on these alternatives and to devise strategies for bringing these changes and transformations about.

Following on from the vignettes, we are left to consider,

- Should worker/learners be involved in community based work?
- Should worker/learners be involved in considerations about childcare and family friendly workplaces?
- Should worker/learners be involved in consideration about how work and workplaces are to be organised?
- Should worker/learners engage with ideas about innovative and ethical work?

Chomsky explains,

... I would like to believe that people have an instinct for freedom, that they really want to control their own affair. They don't want to be pushed around, ordered, oppressed, etc., and they want a chance to do things that make sense, like constructive work in a way that they control, or maybe control together with others. I don't know any way to prove this. Its really a hope about what human beings are like - a hope that if social structures change sufficiently, those aspects of human nature will be realised. Noam Chomsky (1988)

Following research on TAFE curriculum, Kevin Blachford identified the fundamental question in curriculum as, 'what can, and should, be taught to whom, when, where and how? (1986:10). In considering this question with respect to work-related learning a whole range of further questions arise. Amongst these are,

- Should workers be involved in considering and learning about the debates that surround contemporary forms of work?
- Should workers be involved in considering and learning about the dynamics and relations of doing work?
- Should working people be involved in the active formation of future visions of work, community, kinship relations, and political economy?
- Should work, learning, and society be democratised? If so, how is this going to occur?

If the response is that working people should be involved in considering these matters, then we as educators with symbolic and positional power in this field need to consider what role we are to play in such a project. In closing, I reiterate the words of Winona LaDuke (1999:200),

... change will come. As always it will just be a matter of who determines what that change will be.

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EVALUATING ORGANISATIONAL CHANGE: THE ROLE OF LEARNING PARADIGMS

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Introduction

The research domain of this paper is the evaluation of organisational change. It deals with the interpretation of research data associated with a professional development program that aimed to assist an organisation to transform into a learning organisation. The management team of this manufacturing organisation was determined to enrich the learning culture in their company. The managers were also determined to focus the evaluation of the program on the company's performance indicators.

The evaluation of professional development programs is a complex process. The complexity is somewhat reduced by introducing a five level taxonomy of individual and organisational responses to developmental programs. The first four levels were devised by Kirkpatrick (1959a, 1959b, 1960a, 1960b) and the fifth category has recently been added (Phillips, 1996; Pasalis, 1998). The five levels are as follows:

1. Affective Reactions: participants like/dislike the program, find it useful/not useful
2. Cognitive Reactions: participants achieve/not achieve learning and knowledge
3. Behavioural Reactions: participants change/not change workplace behaviours
4. Organisational Results: organisational level indicators show change/no change
5. Return on Investment: program generated profits exceed/lag the program cost.

The relationships between these levels are again complex. Most organisations want their members to individually attain level 3, and then for this individual effect to flow through into levels four and five. The correlations between these levels, based on present research, are paucity, with most of the important segments of the correlation matrix empty, and the available values are small (Allinger, Tannenbaum, Bennet, Traver & Shotland, 1997). This sorry state of affairs is presumably more a function of the difficulty and expense of getting the data, plus the complexity of the inter-relationships, rather than an absence of relationships (Abernathy, 1999:25).

This last point bears directly on the aim of this paper which is to analyse two paradigms that are relevant in the interpretation of data derived from levels 2, 3 and 4 of the Kirkpatrick taxonomy. The first paradigm is a combination of the implicit learning model embedded in the transmissivist model of professional development coupled to a Newtonian model of organisations. The transmissivist model implies that the relationship between levels 2 and 3 is simple, doing follows knowing. The Newtonian model makes the relationship between levels 3 and 4 linear and predictable.

The second paradigm combines a social constructivist learning model with a complex adaptive system model of organisations. These models make the relationships between the three levels very complex and non-linear. Therefore, this paradigm allows very different inferences.

The paper will first introduce the context of the manufacturing organisation and the nature of the professional development program that was implemented within it. Then the two learning paradigms will be described. This will be followed by the presentation and analysis of data collected within the organisation.

The manufacturing organisation and the professional development program

The organisation which is the site of the research reported here manufactures white goods for the Australian and international market. It employs about two hundred people. The majority of the people work on the assembly line, which produces hundreds of products a day. The organisation joined the research project because the management wished to achieve two goals: firstly to understand why their training programs appeared to have little effect at the organisational level, and secondly to move towards the ideal of the learning organisation. A professional development program – The Action Thinking Program – was designed and implemented to move the organisation towards a learning organisation. Simultaneously, research was conducted on the interaction between the program and the organisational culture to understand how learning occurs in this particular setting. Specifically, the program aimed to enhance or sustain the development of:

1. People who take responsibility for their own actions
2. People committed to life-long learning through reflection on action

3. People skilled thinking and learning
4. People understanding individual differences and able to design for synergy
5. People skilled at helping others understand, learn and grow professionally
6. People with models for managing their own time and priorities
7. People skilled at giving and receiving feedback
8. People who are proactive in solving problems in the workplace
9. People who believe in their own rich knowledge and that of others
10. People who understand models of human action and professional growth

To achieve these objectives the Action Thinking program had four strategies:

1. Offering skills, understanding and models derived from the research literature and melded into a coherent framework
2. Offering processes to promote personal reflection in a challenging and supportive environment so that each participant is invited to analyse and renew their own beliefs, values and assumptions
3. Using action plans to connect the workshops to the workplace so that participants are encouraged to take the knowledge and processes back into their workplace behaviour and not leave it in their minds or in their notes
4. Attending to adult learning principles to create the best possible learning environment at both the workshops and back in the workplace.

The following section describes two paradigms of individual and organisational learning and change.

Two learning paradigms

The advent of the learning organisation (Senge, 1992) has sharply challenged the traditionally assumed relationship between training, learning and work; "The field formerly known as *training* faces an onslaught of serious change." (Sugarman, 1998:63). The older models assumed that there was a linear causal process: first training then improved performance; and they assumed that the training venue was the major locus of learning. The learning organisation involves the learner more than the trainer and proposes that "a small fraction of all learning comes as a result of formal training or teaching." (Sugarman, 1998: 64). Instead of going to an occasional training event to learn, the new perspective is going to work to learn daily, and "We are not just learning to do the work better; we are building the organization's knowledge base and revising its tools, processes and products, as we work." (Sugarman, 1998:65).

The recognition that a learning culture is required in a successful organisation, has thrust learning into the forefront of the program evaluation process. Explicit models that take account directly of learning must now underpin evaluation designs. Therefore models of the learning process, models of the evolution of the learner (Butler, 1996; Kakabadse & Kakabadse, 1999) and models of the evolution of the learning organisation are needed (Eoyang & Berkas, 1998).

Training is usually a 'product' design, the ends are specified prior to the program implementation. Training has defined outcomes and competencies, which evaluation uses as the basis for checking whether the outcomes had been reached. This process does not foreground learning models (Krause, Howard & Lutz, 1998). On the other hand programs designed to foster the learning organisation typically have a 'process' design, the outcomes are organisational learning, which by definition means that individuals, and through them, the organisation, arrive at solutions or learning states, that are unknown when the process starts. The organisation becomes "skilled at creating, acquiring and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights." (Garvin, 1993: 80). The explicit outcomes of this process are left unspecified because they cannot be known (Remer, 1997), but will subsequently appear as generic attributes:

- systemic problem solving
- experimentation with new approaches
- learning from their own experience and past history
- learning from the experiences and best practices of others
- transferring knowledge quickly and efficiently throughout the organisation.

The attainment of these attributes by individuals within an organisation is believed to improve an organisation's performance at levels 4 and 5 of the Kirkpatrick taxonomy (Prokesch, 1997).

The two paradigms of organisational change described below each consist of an individual epistemology and an organisational ontology. The epistemologies are summarised in Table 1. The details in the table have been adapted from many sources (for example, Eoyang & Berkas, 1998; Gayeski, 1998; Boshyk, 2000). The two models have very divergent assumptions and expressions of the process of individual knowing and learning. Gayeski (1998:36) states that the "Traditional step-wise, linear models for instructional design no longer fit learning and performance improvement environments." Linear models still continue to be predominant in organisations.

Table 1: Linear and Nonlinear Models of Knowing - Contrasting Epistemologies

Characteristics	Linear Learning Model Implicit in Transmissivism	Nonlinear Social Constructivist Learning Model
Assumptions of Each System	1. There is a body of correct knowledge that is only held by experts 2. The expert presenters know the answers to performance problems in the organisation 3. There is little debate or diversity of values about topics and solutions amongst participants 4. The correct information should be given out in the most efficient manner 5. Top-down is the best way to get a single coherent message across to everyone in the organisation 6. Learning is an exchange from the expert to the participant 7. The participants are efficient passive receivers if the messages in clear and they are attentive 8. The participants are 'blank slates.'	1. Some of the best business solutions can come from fellow employees 2. The knowledge of all participants is to be highly respected 3. Participants are viewed as constructivist and active thinkers with emerging theories about working and learning 4. Participants can be encouraged to change through support and modeling from the group 5. Learning involves reflection on action in a group setting and involves effective feedback to individuals 6. Participants need to be offered learning with no taught answers 7. Participants add value to themselves as they contribute value to others 8. The most powerful determinant of what participants can learn is what they already know
Characteristic Behaviours and their Evaluation Design	1. Workshops are sequenced part to whole 2. Strict adherence to the workshop program is highly valued 3. Workshop activities rely heavily on prepared notes and workbooks. 4. Presenters generally behave in a didactic manner, disseminating information 5. Participants primarily work alone 6. Passive, bookish, listening, reading, case-studies, application-type learning is dominant 7. Evaluation is viewed as separate from the workshop and occurs almost entirely through measuring the attainment of prespecified objectives 8. Evaluation seeks the correct answer or perfect replication to validate learning.	1. Workshops are presented whole to part with emphasis on models 2. Responding to participant's questions is highly valued. 3. Workshop activities rely heavily on participant input 4. Presenters generally behave in an interactive manner, mediating the environment for participants 5. Participants primarily work in groups 6. Active, project driven, reflective learning-by-doing experiences are dominant 7. Evaluation of learning is interwoven with the workshop and occurs through observations and reflective processes at the workshop and in the workplace 8. Evaluation seeks to understand what the participants have learnt, what meanings have they made and thus to determine the future direction.
Goals of the Evaluation Processes	1. To make the presentation process more focused 2. To package the message more explicitly 3. To respond to the clients' expectations of presentations.	1. To give feedback about learning to everyone involved 2. To improve the learning contexts and processes 3. To determine the level of meaning attained by the participants.

The second aspect of the two learning paradigms are the organisational ontologies that they assume. The two versions, linear and nonlinear, are given in Table 2. They each have very different models of what an organisation is, and how it evolves over time, and how it responds to change. Table 2 also gives some indication of what form evaluation takes when one adopts the different ontologies. The details in this table have been derived from many sources (for example, Stacey, 1996; Eoyang & Berkas, 1998; Henderson & McAdam, 1998).

Scientific thinking informs thinking in so many other knowledge areas. It is the dominant thinking paradigm of management theory. As Kiel (1994:1) says "Scholars have, for at least a quarter century, recognised that management theories emulate the dominant scientific world view." Taylor's 'scientific management' and Deming's 'statistical quality control' are two notable examples of this paradigm. As there has been a revolution in scientific thinking (Waldrop, 1992; Kauffman, 1993), it is to be expected that there will be a parallel revolution in management thinking. The revolution in scientific thinking is founded on the science of complex adaptive systems in the biological sciences.

Newton's mode of scientific thinking, his world view for the physical sciences, was characterised by stability, linear relationships, instantaneous effects of causes, laws independent of time or space, the tendency to equilibrium and the promise of control. This world view dominates management thinking to this day (Laszlo & Laszlo, 1997). Its assumptions of stability, linearity and equilibrium lead management to aspire to predictable organisational change. Such an ontology assumes a mechanistic world and assumes organisations are fixable machines.

Table 2: Linear and Nonlinear Models of Systems - Contrasting Ontologies

Characteristics	Linear Newtonian System	Nonlinear Complex Adaptive System
Assumptions of Each System	1. Organisations exhibit predictable and controlled performance toward a goal 2. Change can be measured against predicted goals 3. Organisations are closed, have low dimensionality and are stable and predictable	1. Organisations consist of interdependent people 2. The behaviour of each person conforms to a short list of simple rules 3. The group of persons exhibits emergent, system-wide patterns of behaviour
Characteristic Behaviours and their Evaluation	1. Any continuous change implies a smooth curve of effects over any given time interval 2. Move in a predictable way towards a pre-determined end point 3. Can be evaluated by means of periodic sampling or end-point evaluations 4. Most evaluation systems seek to identify a small number of key variables that effect change and to establish the relationship among those variables 5. Usually assume unidirectional causality 6. Quantitative approaches to evaluation assume that uncontrolled interdependence among participants is minimal; the behaviour of the whole group is the sum of the behaviours of its parts	1. Expect high levels of interdependence 2. Expect unreliable causality 3. Dynamic, massively entangled, scale independent, transformations 4. Change does not follow a smooth, predictable pattern 5. Change is continual but not continuous, it will be characterised by discontinuities 6. An evaluator may assign the beginning and end of an intervention, but the system itself recognises no such boundaries in time 7. Exhibit emergent, or self-organising behaviour. Two aspects of emergence are of interest to an evaluator: sensitive dependence on initial conditions (butterfly effect) and attractor regimes
Goals of the Evaluation Processes	1. To find the discrete objective elements obeying law-like mechanisms 2. To find the decontextualised ideal or model that permits prediction and control of the organisation 3. To measure the organisation's attainment of the proposed goal	1. To understand the organisation's decision making which is grounded on the arational body of collective knowledge that has historically developed 2. To explore a hoped for goal through attention to feedback and the unexpected

With the advent of complexity theory another model is available to think about organisational change. Complex dynamic systems exhibit dynamism, instability, nonlinearity and emergence. In such models prediction of causal relationships is impossible and control is an ephemeral goal, but reflective learning is always possible. If scientific thinking is used to model the complex and indeterminate realm of human and social organisations then the Chaos model (Gleick, 1987; Kiel, 1994) may be much more applicable than the presently dominant Newtonian paradigm.

The following section will present a sample of the data from the organisation involved in the research. Then it will apply these paradigms to the data.

The data and the paradigms

The research project produced a data set arranged as a time series for thirty-five individual participants. There is ample evidence in the data to show that participants accepted the value and efficacy of the program at different times, for different reasons and responded to different segments. Initially most participants found cognitive interest and value in the program, but this interest did not interrupt their regular path in terms of the way they worked and interacted with their colleagues. Then very suddenly some entered a process that led to behavioural change as evidenced by themselves and others. They had learnt something new and were now actively attempting to behave differently.

Many participants also reported that the process of changing behaviourally was like entering a pit of confusion and doubt (Butler, 1996), but that eventually they came out of the pit into the 'ecstasy' of learning something profoundly useful and fulfilling. The depth and the duration of the pits were different for different people, again echoing the uniqueness of the learning responses.

The program was implemented and researched within the organisation for about eighteen months. The times when participants first responded in observable ways to the program are as follows:

- | | |
|--------------------------------|-----------------|
| • One to six months: | 10 participants |
| • Seven to twelve months: | 8 participants |
| • Thirteen to eighteen months: | 7 participants |

These learning transformations were triggered by events that were diverse in their nature and origin. Some events were conditions that existed before the program commenced and only become aware to the participant once they entered into the program. Some other events were conditions that arose during the program, either associated with the activities of the program or outside the program but with connections to processes inside the program. Some observed triggering events were:

- A person in trouble: facing a crisis in self development, seeking answers to the pain they are experiencing
- A person in the midst of change: who is looking for ideas, is a model maker, a learner, open, questioning, looking for added value
- A person habitually looking for growth: looking for outside help, willing to learn
- A person locked away in the science of engineering: who discovers from a colleague that to be promoted he must learn how to manage people, to value people, to develop the performance of others
- A person with a limited circle of concern: who discovers that more could be done at work, and he perceives a responsibility to help the organisation improve
- A person who thought his development was complete: who then discovers through the program that there is a world of ideas that he never knew existed
- A person who suspected he needed to change but didn't know how to: who then discovered the very models and skills in the program that he needed
- A person who needed personal evidence of the programs efficacy: who obtained the data and the personal experience of the worth of the ideas and processes
- A person desperate for his own personal development: who finds in the program the focus on the self very rewarding and uses it for strong personal growth.

About ten of the participants were observed to be unchanged by participation in the program (Casey, 1987). The model of human action (Butler, 1996) that was the foundation of the Action Thinking Program instigated the collection of data concerning the belief systems of these participants. The beliefs of the following participants were never observed to be displaced by the Action Thinking Program:

- A person who believed that the program was for all the others in the organisation and not for himself
- A person who believed that his career would never need what the program had to offer in terms of personal and professional skills and processes
- A person who believed that he was too busy to have time to learn anything new at this point in time
- A person who believed his personality would unravel if he allowed any change
- A person who believed that work improvement was not about his own personal self and who only wanted to learn work skills and technical skills
- A person who believed that the workplace was hostile and new programs were not to be trusted
- A person who believed he would soon leave the company.

The participants have also reported to the researchers in the two years since the completion of the program that profound learning and understanding is still continuing and being fed by processes and models delivered by the program.

These data have a possible interpretation with the first linear paradigm of learning. Evaluating the data from this perspective the following inferences are possible:

- The professional development program was very incomplete in its impact, as not every participant demonstrated learning, and of those who did the areas of learning were partial
- The very delayed responses of the participants imply that the delivery of the program was not forceful or clear at the beginning
- The program had a very uneven and disorganised pattern of responses, which implies that the participants were insufficiently prepared for the course, or the course was disjointed, or the presenters were inconsistent
- A proportion of the participants not showing any behavioural change implies that the program was ineffective and poorly designed and delivered
- The results imply that the organisation was not ready for the messages in the program, it was perhaps a premature step in its development
- People experiencing deep confusion and loss of competence means that the program was unclear in its formulation and delivery
- The mean level of targeted participant responses did not grow during the duration of the program, implying that the program is not effective
- In summary, this Action Thinking Program was not effective, the participants have learnt little of what was required and the program has not reached a significant number of them. The organisation as a whole has not made sufficient progress towards becoming a learning organisation. The expected cognitive uptake by all participants (level 2) did not occur and therefore did not flow onto behavioural change (level 3). The very uneven response at levels 2 and 3 meant that the organisational response (level 4) was very poor.

However, from the perspective of the second paradigm, the nonlinear models, there are different interpretations:

- Chaos theory predicts that a specific impetus is needed to initiate change. The apparent stability of the system must be disrupted to initiate a transition to a new state. Applying this understanding to personal development implies that unless a person's stable state is disturbed, he or she will stay plateaued at the particular level of performance they have. "If the (individual) is not stressed to the point of chaos, then no change in behaviour will occur." (Cavanaugh and McGuire, 1994:11). The data can be interpreted in this framework. Specific events were identified for most participants who significantly changed. Those that did not change may not have met the specific impetus that they needed.
- Constructivist models predict that participants will respond to different segments of the program because of their very divergent starting points into the program. The people in an organisation can always be assumed to be very divergent in their knowledge and beliefs and so the program must offer them a range of models and concepts to meet participants where they are. This cannot occur for each and every person.
- The butterfly effect has immediate and profound implications for the study of the responses of the participants. First it clearly emphasises that even the slightest difference in person-context interactions between two people could eventually become manifest as large differences in behaviour. Some random interactions between participants were documented as having major effects. "Clearly such

variance in human behaviour due to the butterfly effect cannot be treated as error." (Cavanaugh and McGuire, 1994:7).

- The study of human development requires a methodology that uses multivariate longitudinal time series data with a focus on the individual. Individuals appearing to scatter throughout the program space, is exactly what one would expect within the nonlinear models. The design and delivery of the program must respond to this variance, not be condemned because of it.
- The program is still having effects on learning in the organisation years after the completion of the program. This is to be expected from the nonlinear model, and can be presumed to continue for many years yet. The nonlinear model implies that such data should be collected.
- "It has been known for many years that the conscious experience of transitions from one level of knowledge to another is often an abrupt, all-or-none shift" (Cavanaugh and McGuire, 1994:9). The data from this organisation clearly shows this effect. Those participants who did change, made the realisation of the need to learn new strategies very abruptly. Those that did not change tended not to make any shift at all.
- When chaos occurs: "Phenomenologically, a person may feel as if he or she knows nothing and is totally confused." (Cavanaugh and McGuire, 1994:18). What this means to the evaluation of programs is profound. Development of learning and behavioural change are expected to be accompanied by experiences of chaos and restructuring of knowledge. Therefore, the confusion reported in the data is a positive sign that real organisational change is authentically happening. As Cavanaugh and McGuire (1994:19) put it "Confusion may even be a good sign in the right context."
- In summary, the Action Thinking Program appears to be making an impact on this organisation, and it is becoming a more profound learning organisation. The data shows that the response of the individuals within the organisation is close to the pattern that would be expected if the organisation is modeled as a nonlinear organisation. Not everyone could be expected to cognitively respond positively (level 2) and move directly to behavioural change (level 3). Similarly, it is expected that those that did reach level 3 would do so with great variance and therefore would initially have a very scattered impact on level 4.

The two evaluation reports prepared from the two perspectives give strikingly different results. Evaluation is an inference. As such it uses beliefs, values, assumptions and paradigms to arrive at evaluative conclusions. The beliefs underpinning the inferences may not always be explicitly stated but they cannot be avoided (Butler, 1996). The nonlinear paradigm appears to the authors to offer a more meaningful evaluation process and to show the way forward in helping the organisation to change and develop into a learning organisation.

Conclusion

Evaluation is a form of knowing about a program inside an organisation. Thus evaluation is an epistemological issue which is intrinsically bound up with the prior ontological issue. The previous sections have drawn the distinction between two epistemological and ontological stances regarding organisations: the Transmissivist/Newtonian and the Constructivist/Complex Adaptive paradigms. They have addressed how there are two forms of inference from data depicting individual and organisational learning, corresponding to these two ontologies. Certainly, the epistemology of evaluation needs to address the ontology of organisational learning. Models of what is in existence, what is the process of learning and the evolution of the learner, determining what is known through evaluation about the design and implementation of professional development programs.

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NEW KNOWLEDGE AND THE CONSTRUCTION OF VOCATIONAL EDUCATION AND TRAINING PRACTITIONERS

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Education and new economic times

For more than a decade OECD reports have highlighted the challenges new economic times present to member states. (OECD 1988, 1989, 1991). These new times are variously described in post-industrial discourses, but all descriptions point to the unprecedented changes occurring in the global economy (Clegg 1992:156-187, Drucker 1992, Peters 1993, Castells 1993). Furthermore these changes are seen as generating new work and new work organisation, which in turn require new workers with new knowledge, skills and dispositions to meet the requirements of the new economy. (Champy 1995, Senge 1992). Senge, one of the first commentators to foreground the importance of knowledge in post-industrial economies, describes this new work as 'knowledge' work and the new post-industrial worker as the 'knowledge' worker.

According to Senge workers in the new economy are in the business of creating and manipulating knowledge in post-industrial workplaces, characterised by innovation, adaptability, technological change and shifting markets (Castells 1993). Or as Gee et al (1996:28) describe it 'what is important is not the material product or the brute service, rather it is the knowledge it takes to innovate, design, efficiently produce, market and transform products and services as symbols of identity and lifestyle in a high risk world.'

These new economy discourses have been taken up in many areas of government policy, manifested, for example, in educational policies, labelled the new vocationalism (Pollard, Purvis & Walford, 1988, Grubb 1996, Ball, 1994). The policies of new vocationalism emphasise the need for all sectors of education to contribute to the new economy and, for the most part, are embedded within human capital theories of economic performance. This position holds that economic performance is intimately connected to the level of skill and ability of the workforce and is a common feature of the educational discourses of most OECD governments (Papadopolous 1996).

However, these educational reforms, initiated in remarkably similar ways around the world (Ministry of Education Skills and Training 1995:7) have also been accompanied by sustained criticisms of existing education and training systems. In the United States of America, the 'rising tide of mediocrity in the schools' is nominated as contributing to poor economic competitiveness (Grubb 1996:1-23). While the Australian Education Council Review Committee comments that the separate approach to general and vocational education in educational institutions has hindered the development and implementation of more creative and relevant educational responses to the rapid changes in the nature of work and the skill requirements of workers. (AECRC 1991:6)

Other discourses have, in some senses, worked to re-enforce these criticisms by stressing the importance of learning that occurs outside of educational institutions. The discourses of 'learning in the workplace' (Marsick & Watkins 1990) 'learning organisations' (Senge 1994), 'work-based learning' (Boud 1997) and 'informal learning' (Garrick 1997) all work to promote learning **outside of** the educational institution as the crucial site for learning in the new economy.

Drawing on learning theories that posit experience as central to learning, Marsick and Watkins (1990:8), for example, cite Dewey when they argue that the workplace is an excellent site for learning because 'learning takes place through an ongoing dialectical process of action and reflection'. Other commentators highlight the 'authenticity' of the workplace as a learning setting, arguing that authenticity not only privileges the workplace as a rich site for learning (Stevenson 1994) but also provides a purposeful social and cultural context for learning (Pea 1987). The contemporary workplace becomes a primary site of knowledge production, with knowledge production the key element to economic success, both at the organisational and national levels. Learning becomes the means by which employees, at all levels in organisations are able to contribute to knowledge production and its swift application in organisational settings.

Many of these discourses while emphasising the crucial importance of knowledge in contemporary societies, at the same time, and somewhat paradoxically, question the adequacy and utility of the content, organisation, production and transmission of knowledge found in educational institutions. They do this by questioning the traditional understandings of knowledge that have been central to the formation of modern educational institutions. They, in effect, reverse the traditional binaries that once privileged one form of knowledge over its 'other'. Today, epistemological discourses appear to privilege knowledge constructed as practical, interdisciplinary, informal, applied and contextual over knowledge constructed as theoretical, disciplinary,

formal, foundational and generalisable. Or as Gibbons (1994) and Luke (1996) put it, there has been a significant shift in emphasis away from 'culturally concentrated' (academic) knowledge to 'socially distributed' knowledge.

While there has been considerable discussion over why this shift in emphasis has come about there has been less discussion on the consequences of this discursive shift for educational institutions. Yet these institutions and the people that work in them have, in no small measure, been constructed by and through knowledge discourses. Therefore it seems highly likely that this contemporary re-construction of knowledge will inevitably lead to the re-construction of both educational institutions and the knowledge workers who work in these institutions.

This paper examines the effects of these new knowledge discourses on one Australian educational institution, Technical and Further Education (TAFE). This sector of education is one that has traditionally been responsible for supplying Australian industry with a suitably skilled and qualified workforce. It begins by examining the ways in traditional knowledge discourses have worked to construct this particular sector of Australian education.

Education and knowledge

Given the current criticisms of educational systems for failing to respond to the needs of the new economy, it is somewhat ironic that the institution of technical education, in Australia, was constituted in the late 1880's as a result of similar criticisms. Public school education was, at the time, perceived as failing to provide an adequate supply of skilled labour to the rapidly expanding primary and secondary industrial base of the economy (Goozee 1993). Consequently technical education was created specifically to service the labour needs of industry and the skill requirements of the national economy. It was therefore, from the outset, an educational institution distinct from (and for many inferior to) the broad educational, cultural and social goals articulated by the schools and the intellectual leadership position articulated by universities.

For the most part, its status within education was at best marginal, limited to 'training' the skilled and semi-skilled of the industrial workforce. Indeed, according to Scott (1990:7) subsequent moves by that institution to provide training for the emerging occupations at para-professional and professional levels, inevitably led to these courses being taken over by the universities. The justification for this being based, not least by the universities themselves, on the assertion that technical education concerns itself only with the transmission of 'technique' a position, far removed from the broad intellectual goals pursued by universities.

As Ashby observed:

If the subject lends itself to disinterested thinking; if generalisation can be extracted from it; if it can be advanced by research; if in brief, it breeds ideas in the mind, then the subject is appropriate for a university. If on the other hand, the subject borrows all its principles from an older study. Let it be taught somewhere by all means. It is important that there should be opportunities for training in it. But it is a technique, not an exercise for maintaining intellectual health; and the place for technique is a technical college. (Ashby quoted by Hermann 1976: 57)

These discourses, construct technical education as the appropriate place for training the non-professional in work related skills and in the 'techniques' required at work, reflecting a position going at least back to Socrates, where thinking about education has been dominated by the supposed dichotomy between general education and vocational education. (Hager 1994)

As against the disciplinary knowledge concerns of general education, vocational education is portrayed as involving the development of particular and discrete technical skills derived from knowledge produced and verified elsewhere. Despite concerted opposition to this dichotomy by influential thinkers such as Dewey, (Hager 1994) its influence on the different identities of educational institutions in Australia remains strong. The discourses of universities, for example, have always laid claim to intellectual leadership in the creation of generalisable knowledge, made explicit primarily in the disciplines. Indeed their purview over disciplinary knowledge has been used to constitute the academy as the knowledge-elite, a position this has largely been taken for granted in society (Etzioni-Halevy 1985, Wilson 1992).

However disciplinary knowledge, as Usher and Edwards (1994) point out, is itself, a particular kind of knowledge, based on Enlightenment assumptions concerning the nature of truth and the assertion of certain knowledge. The academy constitutes itself as the guardian and gatekeeper of Enlightenment epistemology. Enlightenment discourses of reason, certain knowledge and the pursuit of truth have all worked to frame the institutional identity of the academy. With knowledge, particularly that found within the foundational

'disciplines' cast as the summit of intellectual endeavour. Those within the academy are constructed as providing intellectual leadership in the production of certain knowledge legitimised by the application of rational thought, empirical research and rigorous peer review.

Thus the claim of elitism by the universities continues to be discursively constructed as arising from the 'intellectual capacity' required to master the foundational disciplines. Not everyone has the necessary intellectual capacity therefore the disciplines of the universities are constructed as requiring the use of high level intellectual skills beyond the cognitive capacity of many. This claim by the academy to intellectual leadership, however, makes little sense without the presence of its opposite, intellectual followership and technical education (renamed Technical and Further Education in 1974) in many ways provided this opposition.

In 1974, a landmark report on the future of technical education in Australia. (ACOTAFE 1974) conceptualised TAFE as an institution of 'knowledge users' rather than 'knowledge producers' (Kinsman 1992). Consequently, the Report continued to support the distinction between vocational and higher education along similar lines to those of Ashby (1976). Universities are constructed, even by those outside the institution, as sites of knowledge creation, with other sectors of education constructed as users of this knowledge. Indeed according to Kinsman (1992:26) this distinction 'has been accepted with some pride in most parts of TAFE.'

Although this Report supported this distinction it also articulated, for the first time, an educational philosophy for vocational education in Australia. A philosophy that was based on the principles of access, equity, the primacy of the individual learner in the learning process, the need for continuing and life-long learning and an emphasis on adult education.

The Report set out to specifically challenge the narrow technico-instrumental view of technical education:

There are at least two alternatives to the emphases that can be given to the purposes of technical colleges and like institutions. A manpower orientation expresses their purpose as being to produce the skilled manpower necessary to the development of the economy. An educational and social emphasis is on their function to enable people to develop their potential as individuals but within the realities of the job opportunities by means of which they are aiming to use their education to earn a livelihood. The committee has adopted the educational and social purpose of Technical and Further Education. (ACOTAFE 1974: xviii)

The Report promoted the view that 'vocational' learning is as much concerned with abstract reasoning, theoretical concepts and the development of social and interpersonal skills as the learning undertaken in other educational institutions. Thus in 1974, educational discourses entered the institution for the first time, in any major way, with one of the outcomes being the gradual up-grading of vocational teacher training from short staff development courses to degree level professional teaching qualifications provided by universities. Since that time there has been a steady increase in the number of full time teachers in TAFE constructed as both vocational experts and professional teachers and this change represented a significant shift in the cultural identity of TAFE.

Originally staff working in technical education were recruited solely on the basis of their vocational expertise in a trade or occupation rather than any claim to educational expertise. For the most part, what distinguished technical teachers from others in their trade was that they passed on their specialised working knowledge to others in institutions *away from* the workplace. Indeed TAFE teachers continue to use their claim over working knowledge to construct their professional identity (Chappell *pub pending*).

However, the move to increase the educational status of these teachers through the provision of degree level teacher training qualification in some senses problematised teachers' identification as experts in working knowledge.

Working knowledge and the professional educator

At one level the emphasis on business and industry, at the centre of the policies of new vocationalism, complements TAFE teachers' existing understanding of their identity. As was outlined earlier, the focus on skill development for industry constructs TAFE teachers primarily as industry practitioners, and TAFE teachers' identification with their industry is an important feature they use to construct their identity (Chappell *pub pending*). Consequently, the discourses of new vocationalism that speak of closer links between education and industry and the development of skilled workers have a certain resonance with TAFE

teachers, particularly as they use their working knowledge to 'mark' them as different from other teachers in education.

In many ways, the discourse of working knowledge does similar discursive work for TAFE teachers' as 'disciplinary' knowledge does for teachers working in schools. The geography teacher in the school and the hospitality teacher in the TAFE college achieve an educational identity partly through their 'mastery' of particular **albeit different** bodies of knowledge.

However this similarity is only a partial one. In the world of TAFE the ability of teachers to maintain their working knowledge is given additional importance because many TAFE students are not only learners but are, at the same time, workers. Thus, they are able to make an immediate and on-going evaluation of the working knowledge of the TAFE teacher. The utility and currency of this knowledge that TAFE teachers share with their students can often be tested immediately by students in their working lives. It is in this sense 'practical' knowledge and is judged not in terms of any claim to generalisable 'truth' as in the case of discipline-based subjects in the school or university sectors, but rather its performativity in the workplace. Therefore TAFE teacher's credibility is always open to question and further compounded by her location in an educational institution rather than an industrial workplace.

This location also creates a second point of tension for TAFE teachers. Educational institutions are characterised by different discourses and different sense-making constructions than those found in industry. The implicit and contextual nature of working knowledge, for example, does not fit with traditional educational practices that rely on knowledge conceptualised as explicit and generalisable. Many curriculum and assessment practices in TAFE for example depend on the re-inscription of working knowledge into subjects, modules, theories, learning outcomes, content etc. enabling it to be 'taught' within an educational context. Moreover, this re-inscription draws on educational practices grounded by knowledge conceptualised as 'academic' 'disciplinary' or as Luke (1996) describes it 'culturally concentrated'.

Australian TAFE teachers are thus caught in a contradiction. On the one hand their status is derived from their claim to expertise in the working knowledge of an occupation. Yet their status as professional educator is derived from their ability to implement educational practices that in some senses work against the kind of knowledge expertise they bring to the vocational learning project. There have, of course, been attempts to overcome this contradiction through various curriculum strategies designed to integrate theory and practice. The development of competency standards statements that describe work, the incorporation of various forms of work experience in vocational programs, the deployment of holistic assessment practices and the development of problem-based learning have all in one way or another been used to resolve these tensions.

However the emergence of new knowledge discourses adds a new dimension to this on-going dilemma in vocational education by questioning the validity of modern conceptions of knowledge in an environment that increasingly constructs knowledge as transient, performative, increasingly prone to obsolescence. This contemporary knowledge is now not judged in terms of claims to certainty, nor in terms of its consistency and locatedness within the existing knowledge schema of traditional disciplines. Knowledge is not so much judged in terms of any generalisable claim to intellectual progress but more in terms of its economic benefit. It is not judged, in terms of its 'truth' status but rather its utility in maximising the efficiency of social and economic systems, an example of what Lyotard (1984) calls 'performativity'. Interest in knowledge is now less to do with its social and cultural significance and more to do with its exchange value (Lyotard 1984:4) in the global market. (Marginson 1994, Kenway 1993)

In this re-configuration, working knowledge is constructed as both transitory and performative. It is transitory in the sense that particular knowledges are seen to have short-term life expectancies in the contemporary economy where services, processes and products are in a constant state of change. It is performative in that it is judged as worthwhile in terms of maximising the effectiveness of the new social and economic systems of post-industrialism. It is also transdisciplinary, not bounded by traditional epistemological classification and is grounded by context making no claim to generalisability.

As a result of this re-configuration the concepts of knowledge that have sustained and legitimised the different institutional identities of education, are now characterised as dated and inadequate both in terms of content, organisation and exchange value. As Senge (1994: 283) puts it, when discussing the knowledge requirements of post-industrial organisations:

The 'compartmentalisation of knowledge' creates a false sense of confidence. For example, the traditional disciplines that influence management - such disciplines as economics, accounting, marketing and psychology divide the world into neat subdivisions within which one can often

say, 'This is the problem and here is the solution'. But the boundaries that make the subdivisions are fundamentally arbitrary as any manager finds out who attempts to treat an important problem as if it is purely 'an economic problem' or 'an accounting problem'.

A new challenge has therefore emerged for Australian TAFE teachers, indeed for all educational practitioners involved in vocational learning. How is it possible to maintain currency over working knowledge that is unstable and always in formation? What educational practices can be deployed that support the construction of working knowledge? What place, if any do knowledge disciplines have in the formation of a skilled workforce in new economic times? And what sort of professional practitioner is likely to emerge as a result of these changes? Answers to these and other related questions are now of central concern to institutions and practitioners involved in vocational learning.

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FACING REALITIES: IMPEDIMENTS TO EFFECTIVE WORKPLACE TRAINING AND LEARNING

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Introduction

There has been a tremendous interest generated in workplace learning as the implications of the ongoing technical, economic and social revolutions of the past two decades have come to be understood better (Hawke, 1998; Hager, 1997). Projections indicate that there will indeed be more emphasis placed upon the workplace as a learning environment (Streumer, van der Klink & van de Brink, 1999). A number of factors are contributing to this. There is now a greater awareness that survival within the global economic arena is dependent upon efficient production and management practices. The globalisation of world trade and the removal of tariffs in many countries like Australia mean that only those countries that can compete to world best practice standards in the production of goods and services will be able to maintain their previously developed standards of living. In all of this, maintenance of skill and knowledge currency and the ability to translate such attributes into effective workplace production become of paramount importance. As Thurow (1992) argued nearly a decade ago, in an age in which reverse engineering has become an art form and when a wealth of natural resources no longer conveys economic advantage, the only source of sustainable future competitive advantage lies in skill development.

Interest in workplace learning is surely not misplaced. Without substantial research and the development of greater understanding of the processes that are important in learning in the workplace, then many personal and national aspirations will not be achieved. What is ultimately involved is the quality of life that nations can guarantee their citizens. However, in equal proportion to the importance of the research undertaken in workplace learning the expectations are somewhat unrealistic. As Hawke (1998) noted there was a government push to implement policies directed to workplace learning in Australia well before there was substantial research evidence on this form of learning. One suspects that this has been equally true in a number of other countries as well.

There are considerable limitations on what can be achieved in workplace learning in terms of who may benefit and what may be learned. The restrictions of what can be achieved through workplace learning need to be openly acknowledged since there are too many earlier, overly optimistic assessments that do not really confront the realities (see Hager, 1997). Research in Australia and other countries is now starting to provide greater understanding of the limited success of Australian federal government policy initiatives in the area of workplace learning.

Tensions between idealism and the realistically attainable

From a future scan survey of HRD professionals in the Netherlands, Streumer, Van Der Klink and Van De Brink (1999, p. 273) concluded the following:

There are however two elements in this shift to the workplace as learning environment that are crucial and both not present in the current debate. First, the notion that workplace can serve as a powerful learning environment. The quality of the learning experiences in the workplace rely heavily on the presence of time dedicated to learning, and the commitment, support and feedback of colleagues and management. It is questionable to what extent these conditions are present in the current and future workplace. Second, the shift to learning in the workplace has an impact on the content of human development, since emphasis lies more on acquiring skills and knowledge in the context of the present job. It is likely that this will affect negatively the development of (key) qualifications that are applicable in a large variety of job positions and at the same time could reduce workers' employability.

It is the intention of this paper to briefly flesh-out the requirements for effective skill learning and transfer of learning as alluded to by Streumer et al. (1999), drawing upon the relevant psychology of learning literature. Then it is proposed to examine recent evidence that suggests that the workplace is often a far from satisfactory learning environment even for skills which are directly related to occupational performance. After that, I propose to highlight what recent research is telling us about the effectiveness of government policy initiatives to substantially increase workplace learning before turning to consider types of learning that might realistically be expected to be fostered in the workplace.

Effective skill learning, development of expertise and transfer of learning

Despite the large interest in workplace learning, and substantial efforts by the Australian federal government to implement workplace learning policies, there has been little conceptual analysis from a learning perspective of the problems and issues involved (Cornford & Beven, 1999). The psychological literature on skill learning and the development of expertise sets out quite clearly that effective acquisition of skills and the development of problem solving only occur over extensive periods of time when certain conditions are met. The requirements for extensive periods of systematic training using highly qualified and capable educators either on- or off-the-job have largely been disregarded for more than a decade. For example, in Australia it is possible to search very widely in the competency-based training literature and not find any substantial reference to the skill learning and development of expertise literature (Cornford, *in press a*).

There is a clear need to provide opportunities for modelling for novice learners (Cornford & Athanasou, 1997), effective opportunities for practice and feedback (Cornford, 1996), and what Ericsson and Charness (1994) have termed *deliberative practice*. Deliberative practice is the opportunity for individuals to repeatedly practise skill elements that are weak to remedy this.

The development of expertise research suggests that there are substantial changes to both the quantity and quality of knowledge acquired in occupations over extended periods of time (Cornford & Athanasou, 1997). Substantial, effective problem solving skills are only developed to any significant degree through the competent-proficient-expert stages and only have their rudimentary beginnings in the novice and advanced beginner stages. While there has been a failure to relate the complexities of the stages in the development of expertise to the workplace, the literature suggests that expertise generally takes a minimum of ten years to develop (Cornford & Beven, 1999). There may be legitimate concern about the rate of change of skills and knowledge and whether there is ample time to develop true expertise given the apparently rapid nature of change in occupations. While there has been much debate concerning the nature of changes to knowledge and skills (Zuboff, 1988), most western governments have indicated that there are key generic skills that they would like fostered via their formal education systems. In Australia these are known as the Mayer Key Competencies, in the UK as Core Skills, in the USA SCANS, etc. While full coverage of these issues is beyond this paper, it is doubtful whether more than superficial elements of skill development are changing: it may well be that the nature of the changes which have been observed have over-estimated the degree of change involved. The superficial signifiers of the problem elements may be different but the underlying analytical processes to solve problems would seem likely to be the same.

As is emerging via the issue of generic competencies, there may now be a need to focus more explicitly in our training upon the more important elements, for example problem solving skills and transfer. Problem solving will almost always involve elements of transfer. Present research into the development and application of problem solving into work environments is in its infancy and the issues are further complicated by the need to take into near and far types of transfer (Cornford, 1999b). What we know from nearly a century of research into transfer of learning is that transfer cannot be assumed to occur. It is frequently difficult to attain with any degree of certainty and, if we want it to occur, we have to train very specifically to achieve this goal (Cornford & Beven, 1999). Detterman (1993) has estimated that in workplace learning, where there is on-the-job training to reduce the problems of near transfer, there is still a loss of US\$90 billion to business because of the failure for more than approximately ten per cent of training transfer to succeed.

Two more recent models offer considerable promise for achieving near transfer (Cornford, *in press b*). What is especially encouraging also is that there is starting to be greater realisation in Human Resource Development (HRD) circles that there is no such thing as a 'quick fix', that there needs to be quite significant inputs from a number of levels within the work organisation for there to be effective transfer of learning to other than initial training contexts (eg. Broad & Newstrom, 1992).

Altogether, the research into skill learning, the development of expertise, problem solving and transfer points to the need for close consideration of what occurs in the training environment and support from knowledgeable persons at many levels within the organisation. As will be seen from the evidence below, there is clearly insufficient attention being paid to these elements to ensure effective workplace learning in Australia.

Learning in workplaces

There is good reason to believe that there are some organisations which take the training of their employees very seriously and recognise that training is an investment in human resources rather than a cost. Better training is probably conducted in larger organisations where there can be specific arrangements for more formal training which is increasingly recognised as an important component of effective workplace learning

(Robinson, 1998). There seems to be wider recognition now that smaller firms are unable to exploit the options for effective vocational education and training (Bruno, 1998). In Australia the bulk of employment opportunities lie with small-medium enterprises (SMEs) with approximately seventy per cent of employment occurring with this employer group. The evidence, available from a number of disparate sources where relevant research has been carried out, is that there is not even always effective training of directly work-relevant skills for apprentices in trades areas where there are reasonable expectations that training will be supplied.

Apprenticeship learning is in theory (or was) generally very carefully controlled by law, although recent changes in many Australian states have removed legal protection. Even where that legal protection has been maintained, there is evidence produced from a number of speciality areas that in many cases there has been a failure of employers to meet their legal obligations to assure that apprentices are effectively trained in occupational skills. Cornford and Gunn (1998) uncovered evidence that commercial cookery apprentices were sometimes being subjected to abuse and generally many small-medium business owner/managers revealed little concern for the learning of their employees and a considerable lack of understanding of how to create an environment conducive to effective learning. Similar findings also emerged from Smith's (1996) research into the learning of apprentices in the building industry.

Cornford and Gunn (1998) found that the legal safeguards which were supposed to support apprentices and to ensure effective learning through rotation of jobs, etc. were ineffectual. What predominated were the needs of the employers over the learning needs of the employees. Furthermore, there is much anecdotal evidence that trainees in many occupational areas, who do not have the support of legislation, are treated very poorly and are regularly bluffed and taken advantage of by unscrupulous employers. Support for these assertions come in part from the Senate Inquiry into Quality in Vocational Education and Training currently occurring in Australia and the reports by Kaye Schofield (eg, 1999) conducted in Queensland, Victoria and Tasmania (see below). David Stern (1997, p.2) has argued that twenty years of research and experience in the USA has shown us that 'We can no longer assume that all work experience is good'. Without effective workplace training and supervision it is likely that inappropriate attitudes and undesirable skills, such as stealing from employers, calling in sick when this isn't the case, etc., will occur (Cornford & Beven, 1999; Greenberger & Steinberg, 1986).

Levels of qualifications of workplace trainers

An indicator of the quality of workplace training and workplace supervision may be gained by the level of qualifications held by trainers in industry. The Australian federal government has introduced minimal qualifications for workplace trainers and assessors. As of October 1999 a Certificate IV/Category 2 Certificate in Workplace Training and Assessment has become the minimal accepted qualification. This level of qualification is ridiculously low and clearly inadequate given the expectations held for increased productivity and improvements in workplace training (Cornford & Beven, 1999). However there is no real way of knowing how many workplace trainers hold even this minimal level of qualifications. Outdated statistics indicated that there are only approximately forty one per cent of trainers working in the school-work transition area in Australia, the area which has been most effective and closely monitored, who have the minimal Certificate 2 workplace trainer qualifications. In some instances these qualifications had been gained over two or three days, a period of time generally considered inadequate in which to gain an understanding of even the most elementary training issues (Cornford, 1999b). Despite a plethora of data reported by the NCVER, in what is an issue of national shame, there are not even any reliable data to indicate the level of qualifications of or the proportions of full-time teachers in the Australian TAFE systems. These systems provide the bulk of off-site training in Australia. Calculated estimates for NSW and Victoria, the two most populous states, stand at thirty and ten per cent respectively (Cornford, 1999c).

Disruptions to workplace productivity

Hawke (1998) in his surveys of employers found that many employers had no real understanding of what was required or interest in providing effective workplace learning. (And this could clearly be extended to include Australian political leaders given the deplorable state of statistics and lack of interest in high level qualifications for trainers in industry. See Cornford, 1999c.) Evidence is now emerging that Australian federal government policies to locate more training in business and industry to ensure more and better-trained individuals have also proven to be a relative failure under policies of so-called user choice. The evidence indicates that large and small companies and government instrumentalities have reduced their training efforts considerably (Fooks, 1999), with these statistics forming a consistent trend over the past several years. Policies to move more training into the workplace were, from the beginning, based upon very little research evidence (Hawke, 1998). The concept of workplace training has been largely idealistic, or ideologically driven. It is thus not at all surprising that reports by KPMG and the Allen Consulting Group respectively

indicate that 51 and 70 per cent of companies surveyed preferred 'recruitment to training workers' (Fooks, 1999, p. 8).

Many workplace learning enthusiasts have not attempted to elucidate the impact that training in the workplace has upon productivity. There would appear to be good reasons why many businesses prefer not to become engaged in workplace learning. Despite the hype associated with workplace learning in Australia, there has been a failure to recognise the learning needs of novice and more experienced workers and the ways in which training can disrupt workplace efficiency. In one of the very few analyses of its type undertaken in Australia, Cornford and Beven (1999) highlighted these problems. Novice workers require effective supervision to meet occupational health and training requirements, quite apart from the moral requirement to provide them with skills and knowledge to function effectively in the workplace.

Without adequate support mechanisms for novice workers, there may well be disruption of productivity, either through inadvertent humour generated by mistakes or by necessitating a more experienced operator being called upon to assist a novice worker. Harris and Simons (1999), in a study examining the interface between on- and off-the-job training for building industry apprentices, highlighted a number of other factors adversely affecting learning. These included lack of an 'industry perspective', occasioned by the specialised work, inability to supply quality training and supervision and 'the inherent contradiction between learning on site and the need for the employer to make money' (p.65). The findings of Harris and Simons regarding ineffective workplace supervisor qualifications complemented Cornford and Beven's (1999) expressed concern that many workplace supervisors do not possess qualifications at all, or those that they did possess are inadequate. As Cornford and Beven (1999) noted, numbers of Australian sports coaches possess better training qualifications than workplace trainers who have the power to determine income and job security of employees.

Because employers of workplace trainees are eligible to receive federal government subsidies there have been a number of 'rotts' uncovered in several states. In many instances, now well documented through the work of Schofield (eg, 1999), trainees have been registered but have received no or minimal training from the employers, with some companies benefiting to the tune of millions of dollars. The current, ongoing Senate Inquiry into the Quality of Vocational Education has unearthed substantial evidence of the faulty nature of government regulations and laws to maintain quality.

European research on benefits of employer-provided training

All kinds of assumptions have been made about the benefits considered likely to accrue from workplace learning. Some of the research evidence is intriguing, and apparently contradictory. Research reported by Barrett and Hovels (1998), as part of the intense interest in rates of returns on training in Europe and the USA, raise some very interesting issues which appear to challenge the value of on-the-job training provision. They cite a study by Lynch (1992) which found that off-the-job training with a previous employer increased wages with a current employer while the on-the-job training by the previous employer did not. They also cite a Barrett and O'Connell (1997) study which indicated that 'training that is general in nature is shown to be effective in raising productivity relative to specific training' (cited in Barrett & Hovels, 1998, p. 34). Since the type of training provided tends to be very specific and occupationally-oriented, this raises many interesting questions about the types of learning opportunities available in on-the-job training in the workplace. The research cited by Barrett and Hovels (1998) may indicate that there is a need to develop a perspective through time and a distancing from the immediate effects for there to be learning benefits. That is to say, that time needs to be actively conceptualised as an important factor in effective learning as in a skill development perspective.

Complexity and lack of consistency across workplaces

One of the few elements of any certainty with workplace learning is its complexity (Beckett & Hager, 2000). The research conducted by Harris and Simons (1999) into the views of employers, TAFE teachers and apprentices in the building trades, if nothing else, has indicated the complementarity of off-site and workplace learning. While it would be a mistake to see one occupational area reflecting all areas, the analyses of results and interpretations of the researchers tend to suggest that similar findings would apply more generally. There has generally been a failure, with development of interest in workplace learning, to appreciate historically why off-site training in TAFE colleges and Mechanics Institutes developed over the later part of the nineteenth century and the first half of the twentieth century. Further, what has not been done by workplace learning enthusiasts is to document the amount of knowledge and skills acquired by employees in off-site training at schools and TAFEs and universities before commencement in the workplace, in order to establish base-lines to measure what has been acquired solely via workplace learning.

Harris and Simons' (1999) findings suggest that the different groups of employers, apprentices and TAFE teachers tended to see that there were particular advantages from learning in the different sites. While there was not universal agreement, many employers could acknowledge that TAFE, off-site training did provide the opportunity to hone work-relevant skills when work pressures inhibited the free practice of these skills. There was also admission by some employers that TAFE centres for learning served as clearing houses for additional ideas so that apprentices could be exposed to them in that setting and bring them back to disseminate around the workplace. In many cases too the specialised nature of the employers' businesses precluded the opportunities to develop skills necessary for industry-wide employment. There was also recognition that the apprentices carried ideas with them to the TAFE settings and in so doing kept TAFE teachers aware of some newer work practices and developments in industry.

There appeared to be wide acceptance that workplace learning served as an important means for inculcating trade values and the working correctly under pressure. Yet there was acknowledgment that TAFE learning enabled incorrect techniques acquired from previous employers to be rectified. Clearly not all of these factors applied with each single employer. The inadequacies of one employer or specialised form of employment were cancelled out in some cases by TAFE, while the inadequacies of the TAFE system were compensated for to considerable degrees by the mixture of talents and knowledge brought to and shared in that community-based centre.

What types of learning can occur most effectively in the workplace?

The types of learning which are most likely to be learned in the workplace, to state the obvious, will relate most directly to that occupational specialisation. The work pressures directed to productivity and economic survival (Cornford & Gunn, 1998) will mostly guarantee that understanding of what might generally be termed liberal arts type subjects will not be gained in the traditional workplace unless for some special reason that workplace draws upon such values, knowledge and progressive attitudes. There will certainly be cases where this will be so, but it is unlikely generally to be the case. Similarly it is a mistake to look to the average workplace as a site for the learning of emancipatory values either of a personal type as advocated by Mezirow or similar adult education theorists or the social values associated with either Habermas or Freire. No doubt exceptions can be found to these generalisations, but it would be unrealistic in most cases to expect that employers will directly encourage values which challenge the hierarchical, top-down authority models still widely practised by them and upon which their own authority depends in business and industry. To expect otherwise would display a naivety and lack of understanding of the real nature of workplaces which are all about economic productivity despite the dewy-eyed optimism of some social theorists.

Of considerable concern more generally to the author is the fact that many who enter the world of the workplace are in a real sense refugees from learning and the schooling system. That is to say that many, but again of course not all of them, have found school an unsettling and unrewarding experience. The up-shot of this will be that many of them will leave compulsory education for another form of compulsory socialisation, that which occurs as the particular ethos of the individual workplace is established. Unfortunately in so moving, many of these individuals will do so without having gained many of the additional understandings of effective citizenship functioning, of the principles of social democracy and the more sophisticated cultural values which provide insights into pleasures and understanding of the cultural history of which they form a part. They will also in many cases be leaving school only partially equipped with the learning-to-learn skills which will be necessary to assist them to deal with the ongoing changes they will encounter in most work environments, and to maintain knowledge and skill currency necessary for their continued economic survival and employment.

As has already been observed, there would appear to be limited opportunities for the processes of skill learning to occur since there will be restricted opportunities for extended practice, especially deliberate practice (Ericsson & Charness, 1994). One of the outcomes from the revolution in cognitive psychology has been to recognise that there is a need to teach individuals how to process information effectively. Even capable university students have been revealed to not always know to be able to practise the best methods for processing information effectively. In effect this implies the need to ensure the learning of learning-to-learn skills in an era in which there are tremendous pressure to maintain skill and knowledge currency on account of the volumes of information that now have to be accessed and the speed of new developments (Cornford, 1999a, 2000). The development of learning-to-learn skills will only develop slowly from a skill development perspective (Cornford, 1999a & b). It is unlikely that the workplace will be a suitable place to develop these skills although it may well provide the impetus to add to their refinement.

Conclusions

This paper has set out to challenge the view that workplace learning is inevitably a good thing. By its very nature, in most cases, most of the learning that will occur will be of a narrowly vocational kind. What is more, there is ample evidence that even occupationally specific knowledge and skills will not always, or maybe even often, have been effectively taught to important groups like apprentices who will carry forward skills to the next generations of employees. From the psychology of learning literature there is good reason to believe that there is a substantial need to provide time, guidance, feedback and care to ensure that effective learning occurs. Most progressive accounts of HRD now recognise that support must come from all levels of management for effective transfer of learning to occur and not just from HRD trainers (see Broad & Newstrom, 1992, Streumer et al., 1999). In the Australian context there is little evidence that either employers or governments are concerned about ensuring that even the vocational trainers possess the appropriate levels of knowledge and skills demanded in a modern, changing, extremely pressured workplace.

The pressures existing in a workplace environment, where there has to be concern for productivity and economic survival, often limit the attention that can be given to learning. This is despite the fact that, patently, in the longer term, the organisation is likely to benefit from more highly skilled employees, views widely expressed by the learning organisation theorists. In addition, there are unexamined assumptions that employers and managers are prepared to surrender the power of knowledge even when it is likely to directly benefit the business organisation.

Given that employment in one occupational area is no longer a lifetime undertaking, with several changes of occupation likely, there is a need to ensure that individuals gain some benefit in transportable skills (Streumer et al., 1999). Learning of specific skills in an occupational area is likely to be very narrow in focus and, while it may ensure that an employee remains captive to a particular employer, it may substantially limit any opportunity for the employee to advance their careers or discover paths and specialisations more conducive to personal satisfaction. It also raises substantial questions about the needs of the individual and the society more generally to ensure that the needs of these have transcendence over those of the employer. Under these circumstances it seems unduly narrow to see the workplace as the most important site for effective learning. A more realistic approach is to view the workplace learning environment as complementing, but not replacing, the other off-site learning environments of schools, TAFEs and universities in ways which contribute to workplace socialisation and efficiency.

We clearly need to recognise the restrictions that apply to learning in the workplace. The present realities indicate that in Australia workplaces seldom contain HRD or vocational trainers with high levels of qualifications to enable them to deal with the complex transfer and problems solving learning issues now required in the modern, complex work environment. Furthermore, we need to bear in mind that in few instances are workplaces likely to foster more general personal and social emancipatory values and skills since these are in conflict with the hierarchical values and authority systems of the workplace. Other already existing sites of training and education, notably TAFEs and universities, provide opportunities for objectivity, examination of issues, analysis and argument divorced from the intensity of the workplace.

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SUBCONTRACTORS IN THE AUSTRALIAN CONSTRUCTION INDUSTRY: NO SMALL BUSINESS

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The research

The Australian Construction Industry is currently undergoing enormous change, much of which concerns workplace reform. In New South Wales workplace reform is being managed and directed by the state government in consultation with the industry. This paper is based on some of the findings of a Strategic Partnership with Industry Research and Training (SPIRT) project. The research partnership involved the New South Wales Department of Public Works and Services (DPWS) and the University of Technology, Sydney (UTS) together with some major construction companies. The project brief was to examine the role and effects of the generic competencies in workplace reform within the building and construction industry.

This 3-year SPIRT project provided the research team with the opportunity to investigate issues relating to the generic competencies and workplace reform in the construction industry in several phases. Once issues, themes and development strategies had been identified in the first two phases, the third phase of the project was used to examine particular issues and themes that arose from the data.

Phase 1 identified the competencies that are integral to the Construction Industry. The second phase verified the initial findings that the competencies of communication, teamwork, planning and organising and to a lesser extent collecting, analysing and organising information were critical to the construction industry. It also identified strategies used to develop these competencies in the construction workforce. For the third and final phase we interviewed middle and senior management about the two aspects of workplace reform, occupational health and safety and environmental practices. This data was then analysed in relation to the role of the competencies within the management aspects of construction work. The research identified that senior and middle management spend significant time working with the following competencies usually in correlation with one another; problem solving, planning and organising and collecting and analysing information. The competency concerning teamwork was less prominent.

The Construction Industry 2000

Nationally the construction industry annual output 'is expected to exceed \$45 billion through to the year 2005.' (DPWS 1998, p.17). In New South Wales, government ongoing capital investment expenditure is around \$5-6 billion each year (DPWS, 1998, p. 10). While government is a significant client and regulator of the industry, the actual work in the state is undertaken by private enterprise.

It is a large and complex industry comprising of about 25,000 enterprises in New South Wales alone. Sixty-five per cent of these businesses fit the Australian Bureau of Statistics (ABS 1998) classification of "small businesses". Only 1.3 percent of construction industry enterprises have a turnover of \$20 million a year or more (DPWS, 1998). The role of the major companies has been identified as an important starting point for the implementation of new work practices, including the introduction and development of environmental management, occupational health and safety practices and the promotion of technology and training packages.

The industry is made up of a complex set of relations. Large enterprises take on the role of project managers usually contracting or subcontracting to specialised and generally smaller enterprises for particular parts of the job. Each job brings with it a new configuration of relationships within the work site. In addition to this the workplace itself is physically in a constant state of change. The changing workplace relationships and the pressure to review and update old work practices inevitably create new configurations of problems.

Workplace reform

Workplace reform was initiated in the building and construction industry during the late 1980s by the then Federal Labor government. The position established then was of Australian industry needing to develop and up-skill because of increasing international economic pressure. The result has been that "workplace change has become mandatory." (Sefton, Waterhouse & Cooney 1995). Workplace reform has been most frequently understood to relate to industrial relations but it also includes many other developments such as multi-skilling

and training, all accompanied by a move away from conflict and toward cooperation. Phase 3 of this project focussed on occupational health and safety and environmental practices as significant workplace reforms where we could also examine the role of the generic competencies and workplace learning. We chose these two areas of reform because they were established as priority areas by government policy and as a result of this prioritising by government, there is a serious and documented attempt by industry to implement change.

Generic competencies

The use of the term generic competencies for the purposes of this research has been based on the Mayer Key Competencies. However this research did not place much emphasis on the eighth competency of *cultural understandings* as other research has shown it to be problematic (Moy, 1999). In this project we take an integrated approach to competence. This means competence is thought of in terms of knowledge, abilities, skills and attitudes displayed in the context of a carefully chosen set of realistic occupational tasks that are of an appropriate level of generality. This contrasts with the narrow task-based approach now generally discredited. We draw on the generic competencies set out in the reports by the Finn, (1991) and Mayer (1992a & b) as follows:

- Collecting, analysing and organising information (KC 1)
- Communicating ideas and information (KC 2)
- Planning and organising activities (KC 3)
- Working with others and in teams (KC 4)
- Using mathematical ideas and techniques (KC 5)
- Solving problems (KC 6)
- Using technology (KC 7)
- Using cultural understandings (KC 8)

The NSW State government position

The New South Wales government document *Construct New South Wales* represents the State's "framework for strengthening the capability of the construction industry." (DPWS 1998, p 7). This document provides the state government's position and strategy for the development of the construction industry. Part of this vision is "to ensure the development of a more competitive, innovative, productive and safe industry," that is also "seamless, efficient and profitable, innovative and environmentally responsible." (1998, p 7). This vision emphasises consultation (p 11).

For the purposes of this paper we have accepted the direction promoted by the State government set out in *Construct New South Wales* (DPWS 1998) as correct. This government position is further developed in a range of documents produced by the Construction Policy Steering Committee (CPSC 2000, DPWS 2000), the government's think tank on issues concerning the construction industry. The CPSC document *Positioning the NSW Construction Industry in the global economy* spells out the state government's position:

The thrust of a lot of effort to date has been to use the position of the Government as a major client with significant spending power to set the trend for industry improvement. The challenge now is to extend these improvements throughout the industry. In this way, the NSW Construction Industry will have a sustainable position within the global economy. (CPSC, 2000).

The government's premise represented through the CPSC is that the promotion of a competitive, innovative, productive and safe industry, that is also efficient and environmentally responsible, is meritorious. The focus of this paper is the interface between the government intention and structural elements of both the industry and government aims that hinder that intention.

Learning and training

Within the government strategy for change, training is seen to have an important role. This is evidenced by the proliferation of government publications through the Construction Policy Steering Committee; *Training Resource Manual 1999 -2000* (DPWS 1999-2000), *Developing and Implementing a Training Plan for Small Business* (DPWS 1999), and numerous training resources available from the DPWS (<http://www.cpsc.nsw.gov.au>). The NSW government is keen to continue the pace of change through the development of a learning/training culture within the industry. The government document *Positioning the NSW Construction Industry in the global economy* outlines what it believes to be the current industry needs:

The learning needs of the construction industry in NSW span a wide range of issues that include:

- information and knowledge management
- environmental management
- supply chain management
- organisational learning
- OHS&R management
- skill development
- team formation (CPSC, 2000).

Competition

In today's economic climate competition is promoted as providing the best environment to achieve the best job. Government strategies position Australia as maintaining its international competitive 'edge' through emphasising improvement and increased efficiency. The logic surrounding the concept of competition infers that through a process of 'natural selection' the best package will win the job. Competition is integral to the state governments strategy for improving the industry,

The NSW Government will identify programs provided by the public and private sectors to improve the competitiveness of NSW enterprises in the construction industry. (DPWS 1998, p 34).

Government strategy links the capacity of small businesses to be competitive directly to the improvements sought through workplace reform,

Industry participants, in particular small and medium enterprises, will be encouraged to take a longer term view when addressing workplace issues so that they are more able to meet the demands of competition, to implement workplace reform initiatives... (DPWS 1998, p51).

The construction industry is understood by its participants to be highly competitive, and the fact that the state government is interested to develop the concept of alliances within the industry, is a tentative move to address what are seen to be the negative aspects of the competitive environment.

Alliances

An implied but significant aspect of the NSW government's strategy of implementing change within the construction industry is its encouragement of alliances:

Client and service-focused enterprises that deliver integrated seamless services through alliances that are comprised of contractors, subcontractors, consultants, and suppliers. (DPWS, 1998 p 22)

These alliances are perceived to be ways, in which construction industry enterprises can work and operate, in a more collaborative environment, while maintaining their position in a competitive market place.

Industry context

A significant influencing factor in the construction industry is competition. The construction industry is a sector dominated by private industry. The tender process dictates how jobs, both large and small, are won. Other contextual factors affecting the industry include project-management reliance on specialist subcontracting and out-sourcing, the independence of subcontractors, the pressure of completion dates, financial constraints and an industry culture that emphasises material outcomes.

In order to contextualise the main argument of this paper, below are listed the conditions that form its background:

- Workplace Reform is occurring and, given the present state government investment in improving the industry, is set to continue into the future. (CPSC, 2000).
- The Construction industry statistically invests one of the lowest amounts of capital into training (ABS, 1996).

- Small business has historically had a low participation in training (Baker & Wooden 1995, Baker, Wooden & Kenyon 1996, NCVER 1998).
- At least 65% of construction industry businesses are small businesses (DPWS 1998). The definition of small business used here is that as defined by the Australian Bureau of Statistics, which states "a small business is one employing less than 20 people." (ABS 1998).
- The industry operates through private enterprise on a competitive basis. Competition is promoted by the state government as enhancing productivity. (NSW DPWS 2000)
- The tender process is the favoured method of procurement.

Subcontracting

One of the impediments to change perceived by industry participants in the research is the issue of subcontracting. At present the pressure for workplace reform continues simultaneously with the increase of subcontractual work.

The weaknesses in the industry are to do with the subbies. The turnover of employees and subbies is high. (Site Supervisor 1P3).

As well as being of concern to industry, subcontracting is recognised by both state and federal governments as a concern:

contracting out of work previously undertaken by directly employed staff appears to be a rapidly growing phenomenon which is changing the face of Australian workplaces. Data shows that in the past decade there has been a significant increase in the level of out sourcing of work in both the private and public sectors...it can result in poor quality service and products, loss of expertise, diminished control over workers, costs related to poor OHS performance, and loss of reputation. (NOHSC 1999, p ix)

All phases of the data identified subcontracting as a problematic aspect of construction work. Subcontracting and outsourcing are on the increase and larger building sites currently operate in a way that has the Builder/Project Manager (from here on referred to as the Company) responsible for the management of the work occurring on site but not themselves undertaking much of the actual construction work:

This Company employs 5% of the site workforce. Everything else is out-sourced to subcontractors and labour hire. (Site Supervisor 1 P3).

The Company manages the work of the contractors (Quality Assurance Officer 2 P3).

Now the main contractor has the concept and everything is done by subbies (I1 P2).

Many of the businesses to which the building companies contract/subcontract are small businesses. This paper looks at why the Company may have difficulties in getting the contractor/subcontractor (from here referred to as the subbie) on a construction site implement the government's strategic vision.

The small business subcontractor

Contracted and subcontracted work on the construction site is carried out by a range of businesses. Although there are technical differences between being a contractor or a subcontractor, the concern here is with the small contractor or subcontractor who would fit the ABS classification of small business.

Construct New South Wales indicates that small businesses are significant players in the industry and estimates,

that there are 88,000 enterprises in the construction industry in Australia and about 25,000 in New South Wales. Most are small and medium enterprises and engaged in contracting and subcontracting.

[Typically]:

65% of all enterprises in the industry employ two people or less (DPWS p 16).

Construct New South Wales also identifies issues that government believes affect small business viability including:

- under-capitalisation which means many small and medium enterprises are unable to withstand reverses in the market and have limited ability to change or grow their businesses
- low margins, with little or no investment in research and development of new processes or use of new technologies
- short-term focus, relationships and planning, and a fragmented and aggressive approach to doing business (DPWS p 16).

Limited capital which results in low margins, and the small business difficulty of developing a long-term focus were issues identified in a recent study *Learning and Training: enhancing small business success* (1999) by Kilpatrick and Crowley. This study found that small businesses have a set of generalisable characteristics that affect their capacity to develop. Characteristics of the small business are influenced by the reasons for establishing the small business. Kilpatrick and Crowley found that the goal of 'being your own boss' came second only to the goals of financial success and business growth. (p 59).

In addition to being your own boss, their research suggests that small business operators tend to favour independence (p8). The fragmented and aggressive approach to doing business identified in *Construct New South Wales* (p 16) is reflected in Curran et al (1993) observation that the independence desired by small business can also promote a 'fortress enterprise' mentality. This 'fortress enterprise' is a strategic position developed to deal with competition, but which can also have a negative impact on the acquisition of skills and knowledge. (1993 p. 23). Because small businesses are often set up by an individual or group with a particular set of marketable skills, within a competitive market place, the businesses are forced to seek their promotion in opposition to other competitors. This approach is not conducive to forming alliances or collaboration. The fortress enterprise encourages a distrustful and inward looking approach to business. Kilpatrick & Crowley (1999) suggest that

Many small businesses spend long hours working in the business, which, combined with a strong preference for independence, produces an inward-looking culture (p 8-9)

The fortress enterprise is identified in *Construct New South Wales* and is reinforced by the data collected for this project.

The subbies are often not with the team approach. They are always trying to short change. (CS2 P1)

it can be difficult to get subcontractors to think beyond 'the bottom line — because their margins are invariably tight. (CS4 P1)

Interviewees on construction sites seldom regard the subbie as part of the enterprise but rather as a component that has to be carefully managed.

Subbies as small businesses in a competitive market place survive through outmanoeuvring the competition. Competition by its nature promotes in business the 'fortress' mentality where the business focuses on its own survival to the exclusion of others. Unfortunately the behaviours associated with protecting competitive edge can also be those that resist new ideas and change. A business with small margins, limited time and resources tends to seek business solutions from within its own organisation. This is the businesses' attempt at 'self-sufficiency'. A business busy maintaining its market, doing the hands-on work, the accounts, the staff management, the business development, often has no time left to step back and reflect on whether best practices are occurring, or whether there might be better ways of doing the work. Reflection and better ways of working require time and fresh ideas. The development of fresh ideas and new ways of problem solving usually require input from new sources, which is why the State government is keen to promote alliances.

The subbie attitude is founded on self-interest. With no time to reflect on processes or innovation, when the fastest way to do the work is the way it has traditionally been done, there is little room to consider the other businesses operating on the site, safer ways of working, or environmentally friendly ways of working. The self-interest of keeping that business viable potentially places it in opposition to the needs and requirements of these other important issues:

You can get 10 subbies in one room together. They've all got to work together but they don't want to. (Site Manager 5 P3).

Construct New South Wales recognises that "the industry's production processes are largely determined by its subcontracting structure." And it goes on to profile subcontractors as follows:

the bulk of subcontracting businesses are small enterprises, and are predominantly family businesses, specialising in a particular trade or task skill. Up to 200 specialist skilled subcontractors may be employed on a major construction site. This means that work is organised into small, often isolated packages. (p 16).

Construct New South Wales suggests such a structure has "efficiency and communication implications," (p 16) for the industry as a whole.

The two points raised in *Construct New South Wales* concerning under-capitalisation and low margins form part of the chicken and egg of the small business circumstance. Kilpatrick and Crowley's research identified perceptions of lack of time and cost as significant impacts on the small business's capacity to expand and develop (1999 p 3). If margins were bigger, the money would be available to develop the business. If the business developed, margins would be enhanced. Kilpatrick and Crowley asked participants if there was anything they would like to know more about. The responses overwhelmingly indicated administrative and management skills, compared to a much lower per cent of respondents expressing interest in learning more hands on/trade related skills. The desired skills of administration and management include the invisible soft skills such as communication, planning and organising, problem solving and collecting and analysing information otherwise known as the generic competencies.

The Company and the Subbie

The tension existing at the interface between the Company and the small business subbie is raised continually in the data collected for this project. The changing nature of the industry is not reducing this tension. Workplace reforms, such as occupational health and safety and environmental practices, are now part of the tender process and included in contractual arrangements between the government and Company. These reforms create new problems and require the development of new ways of working. Many old practices have to be re-evaluated and often changed. This includes changing practices that have come to be considered 'standard practice.'

The relationship between what the Company needs to achieve, the ways it is contracted to achieve this, and how the subbie undertakes their particular job is problematic. From the Company perspective, the following comments arose:

Sometimes the subbies pay lip service to things like QA, safety and the environment. (CS4 P1).

They engage in high-risk activity as they don't want their productivity slowed down...they breach safety and they don't train their own workers (I5 P2).

One of the most insistent messages that comes through the data in relation to enforcing change is that old ways of doing things resurface if new practices aren't constantly reinforced;

You need to keep battering away at OHS&R. Environment is the same. (Project Manager 4 P3).

You have to chase up the subbies and make them aware of what their commitments are. (Project Engineer 7 P3).

Company representatives interviewed ensure contractual obligations are met by closely monitoring and auditing the subcontractors. In some instances coercive methods such as withholding payments are used to ensure compliance. What was reiterated often was that constant reinforcement of new work practices is necessary. The perceptions of those interviewed indicated that if the Company relaxed its role, the subbies would soon fall into old habits, or the old ways of doing a job.

Industry training

In order to implement the workplace reforms of improved occupational health and safety and environmental practices, training is essential and as has been noted, the state government emphasises the importance of training. The Australian Bureau of Statistics (1996) identifies a low participation rate in training by the construction industry. Despite these statistics, the majority of company representatives interviewed in phase 3 of this project referred to the importance of training and the induction process as an essential way to introduce new methods of work:

The Industry needs a change in mindset...through training (Project Manager 3 P3).

Education and training is the answer (OHSER 1 P3).

You need to educate people in their responsibilities and the consequences. (Construction Manager 1 P3).

Every time you start a project people just want to do the job. I would like to get the industry wise. (Construction Manager 3 P3).

A Company's commitment to change comes at least in part from the pressure being brought to bear through government legislation. To stay competitive the Company has to address the issues prioritised in government policy. This has encouraged the development of a situation where the large Companies (with some reluctance) are now training the subbies:

With regard to subcontractors, companies are being forced to be educational. (Project Manager 8 P3).

Two major components to implementing industry change are in place, the government's strategic vision and the Company's acknowledgement to the importance of training. The final ingredient, commitment from the subbie is proving more elusive. So what is hindering the subbie from adapting to change and learning new ways of working?

Obstacles to change

Subbies have a number of constraints that limit their capacity to train, including cost and time; and the low margins recognised in *Construct New South Wales* (1998) and *Learning and Training* (Kilpatrick & Crowley 1999).

Literature on small business in relation to training tends to focus on issues such as the effectiveness or appropriateness of training, the informal aspects of learning and the barriers to small business participation in learning and training. The work of Field (1997) and Gibb (1997) suggests that small business relies on a range of informal, contextualised learning methods (discussed further in Kilpatrick & Crowley, 1999). The contention here is that these methods of learning are not sufficient when major change such as OHS&R or environmental practices are enshrined in legislation. In these circumstances the subbie is required to learn new ways. Why do such small businesses *resist* absorbing the training provided for them on site? The training referred to here includes the Induction of the Subbie employees into the site practices of a particular Company, the Subcontractor training pack (Subbie Pack) and Safe Work Methods Statements (Work Methods).

Obstacle 1: Inconsistent messages

Large projects are required to ensure that everyone on site works safely and that subbies evaluate risks on a job and plan ahead to circumvent such risks. Company representatives also report that there can be difficulties getting subbies to comply and to maintain the new practices. The data suggests some of these small businesses are unreliable in their adherence to these workplace reforms because there is an inconsistency in the message they are being given regarding their work reform obligations.

An example of this concerns the disposal of excess concrete after a pour:

Site A:

With the concreters the excess concrete is collected on site, it's not the subbies' responsibility. (Site Manager 4 P3).

Site B:

The concrete supplier has a contract to provide concrete, that supplier is also responsible for getting rid of the extra concrete left over at the end of a pour. In one instance they dumped it on site, but we got them to dig it out and dispose of it. They had to use jackhammers and then put it in a plastic lined recycle bin. (Construction Manager 2 P3).

Although the subcontractors are often seen by the industry to be the problem, part of the contention here is that their resistance to learning new methods of work is due to the inconsistency of the Industry's approach. This is inevitable within a competitive environment where individual Company solutions to problems are promoted.

Obstacle 2: Comprehension of issues

Secondly the capacity to effect genuine reform is influenced by management's comprehension of the issues. Environmental management practices are relatively new to the industry and provide good examples of the inconsistency in the industry's embrace of reforms in a time of change. For example one interviewee stated that on that site:

There are no environmental hazards. (Safety Officer 3, P3).

This safety officers' primary concern was occupational health and safety in regard to the employees on site. There are practices such as painters pouring materials into the storm water system that may not impact on the health of site workers but is an environmental hazard. The experience, training and concerns of an individual on site affect their capacity to identify such issues. It is clear that the industry has some way to go in developing a consistent understanding of what is meant by environmental practices;

Subbies aren't engaged in areas of work that have an environmental impact. (Site Supervisor 4 P3).

What can a brickie do environmentally? (Project Director 5 P3).

While a brickie may not use chemical pollutants (and that is debatable of water) there are aspects of the job that can have environmentally undesirable effects. The work of the brickie affects workers on site and people living or working near the site. There are also waste products from doing the job that need to be recycled or disposed. The brickie needs, as do all subbies, to be encouraged to be part of a team, an alliance member, rather than an independent operator.

Although the research did not detail specific environmental management practices it became apparent from the data that there are very different concepts between managers of what environmental issues are. Only one interviewee suggested his own training had not prepared him sufficiently and he felt the need to learn more:

On environmental issues my own training background is not adequate (Project Manager 4 P3).

Conclusion

The construction industry is in a state of change. It is no longer the industry it used to be, and it is attempting to define itself in new ways. The NSW government has been energetic in its attempts to control and direct the vision it has for the industry. The changes being brought about include reforms to the way work has been done, and there is resistance to this change. There is awareness on the part of the large Companies that training is essential to any implementation of change. Concomitant with this is the problematic relationship the Company can have with the subbie. There is a sense that the subbie symbolises the barrier to change. This paper identifies the role of the subbie as only one of 3 major factors that impede consistent change in the construction industry. They are:

Fortress mentality

The attitude of some small businesses, fostered by the competitive environment, means that because of the prevalent fortress enterprise mentality of some small business subcontractors may be resistant to learning new ways of work. This is fostered by the competitive and individualistic way in which small business operates. The small business operates with low financial margins and has have limited resources. This encourages the development of Curran et al's (1993) notion of the 'fortress enterprise'. Because the subbie has limited time and resources, and is concerned with getting the job done, other skills remain under developed.

Management comprehension of issues

For the changes that are taking place to become embedded, particularly the critical issues concerning occupational health and safety and environmental practices, there has to be a consistent industry wide approach. This means that management (at all levels) needs to have a common comprehension of the issues. Presently this is not the case. Both management comprehension of issues and the 'fortress' mentality of some of the subbies hinder change. They are conditions exacerbated by competition.

Promotion of competition

Competition mitigates against an environment where Company's could learn from each other through cooperative problem solving. The NSW government seeks to change working relationships in the construction industry through the promotion of the concept of alliances. However it is the contention here that a highly competitive industry will inevitably reduce the industry's capacity to collaborate.

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LEARNING; DESIGN; PRACTICE; PRACTITIONER PERSPECTIVES OF WORKPLACE LEARNING

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Introduction

Knowledge has actually become the 'primary' industry, the industry that supplies to the economy the essential and central resources of production (Drucker, 1968.)

Offices are the factories of the knowledge industry using organising concepts originally derived from Taylor's *Scientific Management* (1912), with linear organisation of repetitive tasks that encompass only a small part of the whole service. Vast change has swept the office landscape in recent years wrought largely by the introduction of communications and computing technology. Computers have deconstructed the reality of hierarchical organisations based on restricted access to knowledge. With that change the physical environment of the office has shifted to one that focuses on team effort and collaboration and recognises variation and difference. The efficient, modern office of the 60's has been replaced by the campus or the club of the new century. The sheer volume of information that assaults us daily demands that we continue to learn, there is increasing pressure within organisations for fulltime employees to gain higher qualifications, develop new skills and update old ones.

Peter Senge (1990) stresses that the future success of organisations is intrinsically tied to their capacity to be learning organisations and he discusses the need for the learning to take place at all levels of the organisation as well as individually and collectively.

Continued learning for design professionals

It is well recognised that embracing the concept of lifelong learning is essential to the professionalisation of any occupation and that any member of a profession seeking success and prominence must participate in continued learning and development in some way (see for example Houle, 1984; Cervero, 1988; and for an Australian perspective, Brennan, 1990.)

The design disciplines - interior, graphic and industrial design are currently in the process of professionalisation, yet have little culture of developing knowledge through research or theoretical discourse in which practitioners participate, apply to their everyday practice or develop. Certainly the concept of lifelong learning is unfamiliar to many design practitioners and students.

The majority of design practitioners work in environments which are entrepreneurial and characterised by infrequent contact between practitioners in the same field (Houle, 1984, p. 101), and in which practitioners identify with their client rather than their own professional colleagues (Johnson, 1972, p. 68). This has a tendency to isolate designers from opportunities for professional development and lifelong learning. Many professionals are currently facing changes in the way they practice - increasing competition, emphasis on accountability and the need to meet client demands are all characteristics of the "new professionalism" described by Dix (1995, p. 101) as

Dynamic knowledge and skills with less emphasis on basic training and more on a changing repertoire of knowledge and skill.

External focus on the customer and client rather than on the profession...

Authority given by those whom the profession serves rather than assumed by qualification alone.

Another change affecting professional practice is the increasing requirement for practitioners to work in teams and communicate on many levels across many disciplines. As observed by Baskett and Marsick (1992, p. 10) the growing need for professionals to work in groups is a result of the increasing emphasis on client oriented and systems-focussed business practices such as Total Quality Management.

In the design professions changing patterns of employment increasingly include periods of unemployment and self-employment, insecure contract employment and changes in areas of career specialisation. Forrester, Payne and Ward (1995, p. 295) have identified the threat of unemployment as being a significant reason for the participation of workers in continued learning as it provides an employee with increased flexibility during times of change or recession and in the case of redundancy it can strengthen the position of an individual seeking employment.

Welton (1991, p. 10) asserts

...thinkers as diverse as Rousseau, Mill, Owen, Marx, Gramsci and Cole have argued that work is the central learning domain and sphere for the development of human capacity...there is, they contend, an 'interrelationship between the authority structure of institutions and the psychological qualities and attitudes of individuals' (Pateman, 1970, p. 27).

This places responsibility for the continued learning of employees squarely with the employer. Many organisations have concentrated exclusively on meeting the immediate imperatives of technical knowledge and skills and management capacity. Organisations in the future will require employees to develop the capacity to be flexible and creative thinkers who are increasingly self-motivated and self directed (Drucker, 1993). This suggests a new model for workplace learning is required.

Research methodology

The research project to establish the lifelong learning requirements of interior design practitioners in South Australia has been prompted, in part, by the lack of discourse about design. A series of focus group interviews were organised to provide a means of discovering what the interior design profession felt it needed in terms of lifelong learning.

Focus group interviews were seen as an appropriate qualitative data gathering technique for exploring and evaluating practitioners' understanding of, and attitudes to lifelong learning, a concept that was unfamiliar to many participants. Focus groups give participants the opportunity to listen to others and discuss issues before forming their own views. The focus groups enabled practitioners to interact and learn by sharing ideas and perceptions as they reached consensus on issues relating to continued learning. The majority of participants were drawn from the South Australian Chapter membership of the Design Institute of Australia, the professional body that represents interior, graphic, industrial and textile designers.

A questionnaire conducted by the South Australian Chapter of the Design Institute of Australia in 1994 revealed that the largest group of respondents joined the Institute because they believed membership would assist them with their careers and professional status. When asked what they wanted from their membership, issues relating to increased status and information to improve professional practice scored highest (DIA, 1994).

These questionnaire results suggested that interior design practitioners who subscribe to Design Institute membership would be the ideal respondents for the research project, as the majority of members already had concerns about the social perception of interior design and a desire to improve the quality of their practice. A series of information bulletins provided background information about the concept of lifelong learning and its benefits, an explanation of the aims and significance of the research and information about the focus group interviews. Interior designers were invited to register their interest in participating in the focus groups.

A total of three focus group interviews were held. Each focus group comprised of eight participants who represented a balance between experienced and less experienced practitioners; sole practitioners and practitioners working for design, architectural or other government or private organisations; practitioners employed in permanent positions and practitioners in contract positions; and male and female practitioners. The positions held by the participants varied from designers employed as graduates to those who had achieved associate directorships in medium and large sized design offices. There were also a number of sole practitioners who had been running their own practices for up to fifteen years. The small number of male participants (which is reflective of the profession as a whole) were spread evenly among the groups. Although interior designers were targeted for the interviews, some participants had multi-disciplinary experience and qualifications in the areas of graphic design, landscape design, furniture design and architecture.

The questions formulated for the focus group interviews aimed to generate responses that would provide information about the attitudes of interior design practitioners to lifelong learning as well as identifying their particular learning needs and requirements.

The question schedule was divided into two sections. The first section concerned broad issues and required participants to respond to questions about changes they had experienced in the way they practise, whether these changes had prompted the need to continue to learn and what benefits they perceived from participation in learning activity. The second section required more specific responses to questions about the areas of their discipline they believed they needed to learn about, the type of activities that could represent lifelong learning for interior design practitioners and how these activities could fit in with their careers.

The focus group interviews were recorded on audiotape. At the conclusion of each focus group the facilitator recorded general summary notes of the discussion in a log-book. Analysis of the tape transcriptions and the summary notes indirectly revealed significant information about the effect of organisational structure and office culture on opportunities and motivations for interior design practitioners to engage in lifelong learning.

The design office environment

Learning environments which support learning organisations would, according to Duffy (1997, p. 50)

...mean that space must be organized to promote discourse and maximise learning through providing the opportunities for much more face to face interaction.

In the design of the NMB Bank in the Netherlands, a planning protocol was developed based upon the ideal size for optimum team working (15 – 20 employees). The resulting idiosyncratic form expresses the scale of diverse small groups and provides a challenging alternative to contemporary office architecture. Other components of the building are the daylight atrium meeting and relaxation spaces and generous staircases and circulation paths that encourage unstructured interaction and more leisured movement between activities. Becker and Steele (1995, p.16) describe the environment in terms of

...minimal status and hierarchy, of a concern for the dignity and comfort of the entire staff, of a belief that an enriching environment ultimately benefits the company.

Design offices would appear to be creative environments where learning is given space and funding priority. Typically the management structure is flexible; with responsive teams led by senior partners. Most design practices would boast a good library with current information for continued learning and the technology for access to source materials, as well as comfortable and quiet environments for reading and reflection accessible to all staff. Coffee areas provide places for staff to relax and informally hold discussions, and increasingly areas are designated for team working where spontaneous discussion can occur or scheduled team meetings. A non-hierarchical approach to planning is typical of most design practises with staff allocated workstations in an open planned space and workstations often reflecting the idiosyncrasies of individual staff members. Senior design partners often work in spaces only notionally separated from the activity of the design office that are most likely to be furnished in a manner similar to the rest of the office; recognisable expressions of corporate power are restricted to the areas defined for client presentations, for example reception and boardroom spaces. Steele, Fritz and Jenks' research into the office carried out in 1977 suggests the internal structure of the office environment often most truly represents the state of the organisation, its' culture and climate.

Opportunities for learning

The focus group participants identified a number of issues relating to the quality of, and opportunities for, learning within the design office environment. The interviews revealed that the type of learning experienced by practitioners in the design office was specific to getting their job done, as opposed to learning about design or improving their design skills. Many participants indicated that when they began work as a graduate designer in an office, they had felt as though they were thrown in at the deep end and had to quickly accumulate a vast amount of knowledge in a short space of time.

When I started work there was no sort of training. I was sort of introduced to everyone, shown where everything was and then given some work to do, but I've just found that I have learnt so much just through doing certain jobs. You might come across something that you are unsure about and just ask the people that you work with.

One participant, who had been working with a medium sized architectural firm since she graduated eighteen months ago commented that while she had learnt a great deal about project management and contract administration since joining the firm, she didn't feel as though her design skills had been challenged, developed or improved through contact with her work colleagues. What is more significant, however, is the fact that she didn't feel there was any benefit in extending or developing her skills in design related areas. The need to develop knowledge about the management and administrative aspects of practice was seen as a much higher priority.

It is necessary to recognise the need for interior design practitioners to continually develop their design expertise. Although it is equally important for practicing designers to build upon management and administrative skills, it must not be forgotten that the basic responsibility of interior designers is to provide

their clients with creative solutions to unique problems. The focus groups revealed a general frustration that the more experience a designer accumulates, the more their time becomes committed to the management and administration of projects. Experienced practitioners who participated in the focus group interviews indicated that they required a balance of further learning in terms of both management practices and their key area of professional expertise, design methodology.

The participants generally agreed that the office environment was not particularly stimulating in terms of sustaining practitioners' design passion and creativity.

How do you sustain something over twenty years?...Lots of people who have been out practicing for five to ten years have said 'I have to have something that keeps me going, that sustains me.' Because you do lapse into project management and specification writing. I don't think anyone ever thought they were just going to end up being project managers or specification writers.

Many participants indicated that actually taking time away from the office to become involved in less commercial design activity such as guest tutoring in university design courses or working in a collaborative way with other designers and artists on experimental projects was the most beneficial way for them to recharge their passion for design and broaden their expertise.

The focus groups revealed that specific aspects of design practice were constantly changing and developing, particularly in the areas of environmental sustainability and construction technologies but that in the office environment, most practitioners are too busy administering and managing projects to be able to keep up with design innovations and methodologies.

I felt I had a good introduction to that [management and documentation] right from the beginning...I'm now feeling that I sort of lack the expertise in particular areas and the development that comes from growing concerns about environmental factors and technology. They're the areas that are changing all the time that you really just don't have the time to keep up with when you're working, you're too busy worrying about all the paperwork that's got to be done for the project.

Contact with product and manufacturing company representatives and reading product information brochures was the major way of learning about new developments and technologies in the design field. The participants were, however, aware of the sales-oriented, biased nature of this material and the potential dangers of accepting the information at face value.

Another aspect of the design office environment that impacted on practitioners' learning experiences was related to the highly competitive nature of current design practice. A number of participants who worked in medium and large sized design offices or were employed by architectural firms had no real contact with other practitioners outside their place of employment. They stated that they felt isolated from their peers because the extreme competition between firms did not allow them to reflect on their practice with designers from other offices. In addition, the economic need for offices to move quickly from one project to the next, and to take on multiple projects resulted in many participants commenting that they rarely had the opportunity to reflect upon and critically analyse their completed projects.

Motivations for learning

The focus group participants agreed that the increasing prevalence of often insecure short term contract employment for design practitioners has resulted in a reluctance on the part of employers to invest in the development of their employees. Similarly, designers employed in contract positions felt that short-term employment offered little incentive for them to participate in learning activity, whether it is formal or informal.

I don't think we'll go back to salaried positions either. Even though people might work continuously they'll be on a periodically renewed contract basis. So there is no sort of commitment from them to the firm and no commitment from the firm to them.

People move on because they feel they're not getting anywhere, but if you provide an atmosphere of learning they won't have a need to move on.

Even participants who were employed in full time permanent positions believed that employers needed to do more to encourage learning activity among their staff.

...I think a lot of responsibility comes back on the people employing you. Making a commitment to you and saying you are a part of our firm, we believe in where you are going.

Only one participant from the focus groups had experienced formal continued learning (in this case a CAD course) that had been suggested and funded by her employer. All other participants who were employees agreed that it was up to them to 'sell' the benefits of continued learning to their employers. In many cases, practitioners had negotiated a few hours off from work each week to attend evening classes run by university or TAFE providers on the understanding that the time would be made up after hours.

Well basically I didn't expect them to support me and I'm doing this off my own back because I wanted some more professional development. All I basically asked them for was time in lieu.

It was generally agreed that offering time in lieu was the biggest investment in formal learning activity that employers were prepared to grant their employees. The one participant who had attended the employer funded course revealed that she was expected to bring the new knowledge and skills she had gained back into the office and train other staff members. It was interesting to note that a number of participants voiced resentment over this particular employer requirement.

I don't like the attitude where one person is expected to go out and learn and do all the work and then come back into the office and teach everyone else. If it's got a direct benefit to the firm they will pay for it. If they can't see any future benefit then it's your time.

The focus group interviews also indicated that even though many practitioners had successfully negotiated time off to attend courses, it was common for their employers to ignore the new, developed skills of their employees once they had completed the course.

A lot of places are happy for you to go and take on extra learning but whether they actually use it when you come back to the office is another thing.

Participants felt frustrated by the fact that although they had gained knowledge and developed skills that could benefit the design services offered by the practice and even provide the office with a competitive edge in the quest for clients and commissions, there was a reluctance among their employers to recognise and utilise these new skills.

The issue of job security was particularly relevant to the focus group participants. One participant, who had been working for an architectural firm for six months on a contract basis, was considering enrolling in an evening CAD course in the hope of extending his employment contract during quiet periods.

If I became more proficient on CAD in the office...where a lot of work is done on CAD...and the interior design work dropped off, I could start work on some other project, or do some basic drafting with CAD until the interior design work picked up again.

In this case, increased job security was the prime motivation for learning.

A further discouragement to undertaking formal learning activity identified by the focus groups was the difficulties of working in a design office and attending structured learning programs.

... although we are all saying that it's nice to do further education, it seems to be that it's not a high priority. If work is there then you do the work but if you've got a lecture on then that should be as high a priority as work. But if you are an employee you can't necessarily do that.

The participants agreed that due to the nature of design practice, designers are continually working to the time constraints of project deadlines. Design practitioners regularly work long hours to complete a project on schedule, meaning that attendance at formal lecture or workshop sessions, regardless of the time of day or evening, is often impossible.

The focus group interviews revealed that this was not just a problem for designers employed by architectural or interior design firms but was also an issue for self employed designers. Participants who were sole practitioners also commented that they faced the problem of not being able to leave their practices in order to undertake further formal study.

Conclusion

Although superficially the physical environment expressed by typical design office planning suggests a creative working environment that is conducive to learning and appears to value activities associated with learning, our research underlined the discrepancy between the appearance and the reality, the physical environment and the workplace culture.

The responses of participants suggest that there is a lack of understanding by the management of many design offices of the value of organisational knowledge represented by its employees.

Watkins (1991, p. 22) describes workplace practices as generally unsupportive.

...training and development tend to be a fringe benefit, with learning constituting a reward for service or for loyalty; or a form of organisational socialisation...More and more, learning is essential to enable the workforce to perform increasingly complex and changing tasks in increasingly complex interdependent contexts.

Longitudinal research carried out by Lillard and Tan in the United States (1986) found that company sponsored training had the most significant effect on employees' earnings and employment prospects, but that women and those who changed jobs frequently received less training.

It is clear that the human capital benefit of employee training is enormous and equally clear that a segment of the workforce is denied access to it (Watkins, 1991, p. 23).

The focus groups have suggested that to encourage learning design organisations should provide encouragement for both formal and informal learning experiences including continuing professional development courses and reflective practice and develop a workplace culture which supports a balance of dialogue about design and pragmatic management functions.

Workplace culture is the pattern of basic assumptions and beliefs shared by its members that informs their behaviour - being learnt and reinforced by participation in work activities. It can serve as both a catalyst and a constraint. The research suggests that individuals value the opportunity for continued learning in the workplace but that design organisations are not adequately supporting this need due primarily to competitive pressures and a lack of vision.

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LEARNING AT THE POINT OF PRODUCTION: NEW CHALLENGES IN THE SOCIAL DIVISION OF KNOWLEDGE

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Introduction

There is an increasing recognition in educational policy that the contemporary labour market requires both the continuation of the standard division of labour between "work of the hand" and "work of the mind", and at the same time requires their increasing integration. This paper argues that significant pedagogical lessons remain to be learned from the old tradition of "the master-apprentice" learning model which might profitably be applied to future vocational learning as well as to fields of academic based learning.

The paper is informed by empirical work conducted in Norway: participant observation in a mechanical engineering plant, in the printing industry and in a cleaning products factory, as well as from interview and survey data gathered from vocational school students, apprentices and vocational school teachers over the past two decades. We are concerned to constitute vocational learning as a subject of inquiry in a non-positivistic and inductive manner, seeking to assess its strength and weaknesses in light of the social division of knowledge in society. Our aim is to suggest useful pedagogical features that arise from this form of learning, and which can contribute to the improvement of vocational pedagogy.

Our intention is not to dispute the assumption that more general education and a more profound overview of skills, science, society and history are required of the workforce due to advances in technology. Our aim is to suggest that the methods of instruction necessary to meet this challenge ought to include features that are intrinsic to learning situations traditionally found in apprenticeships, on-the-job training, and in vocational workshops. In the type of learning we address, knowledge is viewed as contextual, holistic, and social. We view the acquisition of knowledge as internal to the learners' being as individuals, who learn in the course of interacting with one another in society. Individual learning advances when there is an active relationship between the learner and the phenomenon that is to be studied, learned and investigated (Smith 1987). Part of this relatedness in learning, and the part crucial to vocational education, is that knowledge emerges from the social relations of all those engaged in a productive process in society. The type of socially constructed knowledge we focus on here has also been called "working knowledge" or "knowing for work" (Jackson 1990).

Workshop learning and the old apprenticeship system, despite their often oppressive social relations between master and apprentice, incorporated many features of what today is called activity theory (Engeström 1996, Leontiev 1973) which stresses learning socially, inductively, and in integrated processes somewhat different from individualistic, concept-oriented, deductive learning of the academic classroom. Meaning and value, and hence goals and satisfaction, often emerge in workshop learning from the interpersonal social learning process that may have to do with working together to provide services and produce products. By means of these processes, learners come to exercise a growing level of expertise.

Psychology of learning and culturally negotiated meaning

Research in the Soviet Union in 1920s and 1930s examined educational development in children in relation to socialization, the labour processes, and the acquisition and use of language. Vygotsky (1986 [1962], 1978), Leontiev (1978, 1981), and Luria (1976, 1979) examined, among other things, the formation of individual character and skills from socially constructed learning and working processes. The approaches of these scholars, together with the work of Voloshinov (1973), Bakhtin (1981, 1986), George Herbert Mead (1938, 1947, 1992) and Alfred Schutz (1962), and more recently, the work of Dorothy Smith on the sociology of knowledge and particularly the social relations embodied in the process of knowing (1983, 1987, 1990, 1993, 1996), are relevant to our enquiry into how the individual knower acquires skills and meaning through social interaction and tests these in relation to socially approved knowledge.

The point of departure here is the assumption that meaning arises from social interaction, and that speech meaning is associated with this sociality. A person makes meaning, or sense, for another person, someone located outside her/himself, and the other takes that meaning in, sifts it, and makes it hers or his (verbally or in a textual form): accepting, modifying, rejecting it (in relation both to the interlocutor and to common cultural values and varying personal experiences), and responding. This approach sees the commonality of culture and perceived reality as something continually internalized, sifted and questioned, by all of us in society, through our "inner speech". This speech form is a medium through which we relate to the material world beyond our corporal being. This socially constructed inner speech develops in the course of childhood

and allows us to relate to one another, to negotiate and build a common knowledge through learning, conforming to, criticizing and elaborating what has gone before, in light of what is going on at present. It also allows for the making of social distinctions and hierarchic evaluations. Knowledge, as opposed to skills, expands and deepens our inner speech, and does so, we argue, more effectively through the process of group work and group learning.

Lev Vygotsky, in *Mind and Society* (1978) proposed an inductive model of learning development. He stressed that the learning child in its social context moves dialectically between spontaneous, self-referential learning, and the more scientific and logically organized, socially established learning promoted by the teacher. This he called the "zone of proximal development," and argued that the assessment of the child's on-going performance in this zone was a more precise index of learning development than was the IQ test based upon already achieved knowledge.

Vygotsky argued that the learning child's acquisition of generalized and comparative meanings for words is highly dependent upon being particularized in a specific context. If the learner has not experienced a specific aspect of life, her or his understanding of the words that generalize that experience, remain incomplete until everyday life introduces the experience which gives depth of comprehension to the generalizing word. This process occurs in the zone of proximal development, the necessary interplay between inductive, experiential learning of the subject (which gives rise to "word sense") and the deductive generalizing instruction of the teacher and the curriculum (which helps expand understanding of generalized and abstract word meaning). Without rich experience in the acquisition of the many-faceted senses of a word, one does not learn to appreciate the full force of meaning that a word possesses in a culture and language. This process has parallels in many learning situations, particularly in workshop learning.

The relation between the learning subject and the speech registers or genres is always a dialogue where socially established meanings interact with the learner's immediate meaning of the moment, and with a different, more formal speech genre of the educational system. Formal educational genres tend to be of a textual nature: speech registers related to culturally standardized texts, diagrams, maps and charts. Speech genres can be considered essential components of both social stratification and the "political economy of knowledge". As one learns dialectically, moving between local "hands-on" experience and wider, secondary experience that has its own socially formulated speech genres, the reflection on one's experience is constantly challenged and revised by the omnipresent learning process and the prevailing power relations.

When the learner struggles to give "discursive shape" (Smith 1996:189) to experience, this is, of necessity, a social and communicative act. It involves hooking a local sequence of action and experience into a wider discourse (Smith 1996:189). Smith cites George Herbert Mead (1938:370)'s observation that the mediation of meaning between the individual learner and the "real" environment is a social act which, through language, abstracts the "universal character" of an object, or a discourse, and establishes it socially as a real object, a real thing recognized as such socially by many communicating actors. This is the method of scientific advance, of establishing a commonality of meaning. Learning, then, with the help of language, is a highly socially constructed and disputed act, and it confronts the learner with a complex world of various speech genres and hierarchical sectional interests associated with different facets and degrees of inclusiveness of life, and different levels of abstraction.

Indeed, learning must also take into account power relations in society. Often the elitist, scholastic, linguistically articulate speech genres of the powerful strata exert a hegemonic effect - what has been called "symbolic violence" by Bourdieu & Passeron (1964) - on those not part of this elite. These genres impose constraints and ceilings on the advancement of the learner, something not overtly addressed in the classroom.

How, then, is vocational education to cope with increasing demands for types of skills training that embody these higher degrees of abstraction which are often associated with the elite, or at least, with speech genres foreign to local working people's culture, with its concrete, socially interactive ethos? Among both teachers and students in vocational learning/teaching situations, there is a resistance to the speech register of the scholastic elite (Berner 1989, Giroux 1983, Grignon 1971, Mjelde 1993:114-119, Willis 1977).

This sense of "the otherness" - of one's distance from traditional academic education - is evident among many vocational students and apprentices. The existence of this cultural and class distinction does, however, contextualize vocational learners' choices, and predisposes many of them to participation in alternative, practical, social and immediate pedagogies like those based on workshop and group learning (Lien and Mjelde 1999). Current technological and policy developments pose a particular problem of motivation for teachers who are asked, increasingly, to provide locally focused, activity-oriented young people with more academic knowledge. Those being educated often consider this academic curriculum to be elitist, irrelevant and boring "by definition." Can, then, group workshop learning help bridge the gap between the two types of knowledge required on the new labour market (that is, learning the situated "word sense" of processes and

things, from participation in activities, and learning the broader, more general, text-oriented "word meanings", charts and paradigms necessary for using the former more effectively?

We suggest that to a considerable degree this can be done, but the effectiveness of any such moves requires understanding some of the analogous learning processes that occur in actual production processes. These processes are linked to social dynamics, norms and conflicts, which examples from work places can highlight in ways that differ from normal group dynamics in traditional classrooms. In this light we now examine certain empirical on-the-job learning processes and their corresponding zones of proximal development in an attempt to understand the functioning of social relations in the workplace.

Real working knowledge

The characteristic feature of vocational education is workshop learning and through apprenticeship, building a close analogue with working life. In the apprenticeship project of 1982-84, wherein 1,617 apprentices were interviewed about their learning experiences both at school and in working life, 89% preferred learning in the workplace. The participant observation research built into this project showed that the seventeen apprentices observed in the mechanical engineering plant, and all nine of those in the graphics class, in which the researcher participated, preferred learning in the workplace (Mjelde 1993, 1994). It was especially the general education classroom components of their curriculum to which they objected. The apprentices considered the pedagogical model based on workshop practice to be both positive and very different from the classroom model on which general education is based. The workshop practice discussed below is drawn from participant observation work in a Norwegian cleaning products factory where one of the authors received on-the-job training.

Learning in this factory was coloured by the fact that both learners (new employees) and teachers (seasoned employees) were selling their labour time to the employer. Learners were not learning "for themselves" and teachers were accorded no particular status or authority within the organization. Most employees (both learners and teachers) sought to do a decent productive job, but within the limits and standards of a socially binding class ethos. They gained satisfaction from carrying out their tasks professionally and receiving their pay cheque. For a period, a trade union-sanctioned graffiti was written in felt pen over the control panel of one production line: "Here we work for money. If you want loyalty, buy a dog."

Those with a family background in industrial production, including the chief of the production floor, treated the learning of tasks as primarily activity-oriented. One picked up the job by doing it. Most employees below the level of foremen, made jokes about those who showed excessive concern for the company's productivity. These workers also criticized the rather formalistic, non-organic way that "just-in-time" production was applied to this factory, and were very cynical about its success.

Their improvement suggestions had been ignored by management, who aimed to eliminate all storage of product inventory from the premises, despite huge production time loss due to recalibration of machinery with each change of product. Those with different relations to production in their background, and more formal, classroom education, tended to combine activity learning with broader explanations of the production processes and rationale. The combination of practical experience and overview found in this stratum of workers best approximated the role of the teacher in vocational education.

Upon arrival, the researcher found that even the overall production chief (who had been promoted from work on the production lines) told him nothing about what the work would entail. The shift boss was similarly taciturn, merely depositing him on a production line. The head of the production line smiled and, above the din of the machinery, motioned him to observe the process of bottling the product, weighing, labelling, boxing and transporting to the storage area. Half an hour later, the shift boss took him upstairs and consigned him to the pedagogical care of the employee whom he would be trained to replace.

This "teacher" was a university student who had been on this product line for eighteen months. His explicit teaching methods were twofold. First, he explained the overall processes and discussed both production and management processes, welcoming the newcomer as a fellow observer of a different, rather exotic world. Secondly, he demonstrated each step involved in the work, and urged the newcomer to carry out each task. When working downstairs on the line however, learning was strictly by emulation and conforming to the demands of the machinery.

A few weeks later the researcher was sent to work alone on the hoppers above a different line, where the regular worker had reported sick. No one gave any instructions, not even to explain what the product or the job description was. Here the process was similar, but production moved much faster. The researcher's zone of proximal development had been deemed sufficient by now to be applied to a different but parallel learning

situation. He found it necessary to go downstairs to find out what the finished product looked like, so as fill the capping hoppers with correct caps. (It was a toxic cleaner with interfitting concentric child-proof caps). Then he asked everyone on the line how many flasks that conveyor held, so that he could calculate the ratio of empty flasks to cases of the finished product. Everyone shrugged, and gave no instructions. Eventually, the researcher found the hopper capacity written almost illegibly under the conveyor belt in felt pen, and was able to calculate the required numbers. The previous shift worker had left a record of the number of pallets already used, which helped. The line moved fast and the work was quite intense. At the end of the shift one of the production workers below asked why the new man had not finished his job of clearing the downstairs production line of rejected or unused flasks at the end of the run. The researcher replied that no one had told him that was one of his tasks and that he had been working full out upstairs. "Well," the reply came, "you know now."

Somewhat later, the researcher was emptying the plastic press machine (for recycling plastic), a process with many small manoeuvres. A woman who had been working the next line stood watching (her line's production had stopped). She said she felt she should know how to empty this machine. She was asked if she wanted to try. No, she merely wanted to watch. After watching she said, "I get the hang of it." About a week later when the participant observer came on shift, he noticed this woman instructing a new young temporary worker on how to empty the plastic press machine. On the basis of what she had observed and the new temp's hands, they did the operation perfectly.

"You were a good teacher," she said.

"I didn't teach. You were a good observer."

"Same difference," she said.

In the first learning experience above, the instructing was done by a fellow temporary worker, who was also a fellow academic with a habit of explaining paradigmatically as well as demonstrating practically. There was an element of work comradeship involved - both were employees, spelling one another off between breaks. This gave rise to an implicit social pressure for conformity to production standards. It also pressed the neophyte to "come up to scratch" in the eyes of his senior fellow worker.

In the second instance, the line was populated by people who had worked together for years. They saw temporaries come and go, and made almost no effort to teach. They indicated that all newcomers should be allowed to find out for themselves, the way they, the senior workers had done years before, and to sweat a bit in the course of "working things out". This was a rite de passage. If the neophyte persisted, matching her/his growing skills with the approved work standard and personal behaviour, s/he became de facto a decent workmate, whereupon the team would begin to offer advice and share production information to supplement on-going practical experience. The majority of what the newcomer had to learn for fulfilling the basic job requirements resulted from direct observation and emulation, and a desire to work at the team's standard of productivity and professionalism.

Here, to use Vygotsky's zone of proximal development, and extend it to lifelong learning, we find that the learning process involved ongoing relations between the worker and the machines, the worker and the work team, and between the work team and management. Temporary workers were implicitly assessed, by their workmates, in each of these relationships. In relation to the machines, the worker "comes to know" the machines, their rhythms and their specific tendencies toward inertia. For example, when something went mechanically wrong, a photocell system cut the electricity, stopped the machine, and activated warning lights. But the worker who was "really on top of things" already knew the problem before the photocell stoppage and the flashing red lights, responding immediately to changes in the tempo of production from the attendant sounds, sights and vibrations. If, for example, when working at the flask elevator machine, one experienced definite syncopations of correct production, one heard and felt a CLINK-CLANK PLOP, TICKETY-TOCK, WHOOOOOSH! sequence repeated over and over. When the regularity of syncopation was disrupted, the worker jumped to attend to flask blockages in the machine, or to make certain adjustments. The new employee waits for the lights and cessation of the machinery before going into action, but the seasoned employee gains a better sense of satisfaction and teamwork, if he or she responds directly to the machines' functional messages. Production is smoother and more rhythmical and the job time flows swiftly toward the break or the end of the shift. There is an element of Goffmanesque impression management to working as a team and in quick response to the rhythms of the machines (Goffman 1959, 1961). Having a feel for the machine and the teamwork, and operating with ease and without stress, is the basis of self-respect and self-image in the workplace.

One immigrant employee, who was terrified of the machines, worked fiendishly all the time as though trying to out-perform the machines. On her first day, she was emptying flasks into the hopper and conveyor system upstairs without much guidance. She filled the hopper far beyond the 4,200 flasks it would hold. Slippery

plastic bottles fell around her ankles. She then took to pouring more flasks directly down the hopper and, unwittingly flooded the production floor until the workteam below were also knee-deep in bottles. She lacked a feel for the rhythms of the job, and the human role distancing involved in team work, where one works under the production discipline, but without straining, and retains a modicum of remove and self-identity which signals one is "not owned by the employer."

Two systems of learning and accessing knowledge were at play, and were integral to the contradictions and disjunctures that occurred on the production floor: learning by doing, by observing and building a relationship to workmates and one's machine, or, learning the local hands-on activity in relation to a systematic overview of the broader process. Neither of these types of learning could be isolated in a pure form on any work team. They were always confronting one another, negotiating, and blending, such that learning, problem-solving and group dynamics were in a state of flux.

Implications for vocational pedagogy

The present technological processes in industrial production challenge the traditional distinction between mental and manual labour, between practice in workshops and theory in classrooms and between vocational and general education (Sohn-Rethel 1978). Current changes have led to searches for new research approaches and theories transcending boundaries between economics, organization studies, sociology, cognitive science, psychology and anthropology (Applebaum 1992, Coy 1989, Engeström 1996:134, Moll 1990). In this light, "learning as a social relation" has implications for the praxis of teaching and learning sites, be they a factory, a technical school or a university.

Workshop education addresses central questions about "learning as a complex of social relations," a reality sanctioned by the forces of local culture, of interaction, of dealing with power disjunctures, between specific social groupings and in society in general. It gives people active tools for analysis. Such vocational pedagogy can transcend the debilitating practice of splitting the individual from social interaction, the hand from the mind, and the husbanding of knowledge and authority by the few, instead of uniting action and theory in a lifelong learning process capable of diffusing knowledge and authority ever more widely.

In response to changing labour and technological processes, shifts are also occurring in the paradigms for teacher training in Norway (Gulbransen 1993, 1994, Hiim and Hippe 1992). One of the present writers is employed in a teacher training college to instruct vocational teachers to conduct research. Here, a pedagogical model of learning-by-doing and working in groups has been instituted. The goal set for the students is to produce a thesis. They are encouraged to base their analysis and thesis production on their own work, their experience as former skilled workers and currently, vocational teachers. One professor works with a group of eight students. All teachers and students comment on, and contribute to each participant's project, seeking to situate it contextually, both from the standpoint of their pedagogical experience and from the body of research and discourse associated with the particular subject of investigation within the framework of guidance provided by the teacher. This process goes on, parttime for four years until the students have finished their projects (Lien and Mjelde 1999). Those who instruct in this program seek to develop a form of "workshop learning" which stresses the participants' own work-related experience, the dynamics of working in groups and teams whose members learn from one another. At the same time students are engaged in both the assessment of textual secondary source materials and technical data-gathering techniques, and in reflection on their own and their classmates' experiences as vocational teachers. This produces a modest zone of proximal development for each. Students are simultaneously challenged individually, as well as inspired and disciplined by group dynamics. The work is inductive, analogous with the "hand to mind" tradition of vocational schools and apprenticeships. The students are also teachers in the vocational system, and many have personal experience of on-the-job learning in their earlier skills training. Theirs is situated knowledge. Teachers aim to expand this local knowledge inductively, through a process of learning in action, in close relationship both to practical skills and to standard literature and the development of overview, so as to arrive at broader comparative levels of understanding.

While the transfer of knowledge in such a situation is quite different from that occurring between employers and employees in a workplace, this type of workshop learning does contain a number of positive features common to the workshop/factory - group work, problem-solving and, to some degree, knowledge transfer among fellow employees common to the old apprenticeship system. Projects imply activity, the use of different spaces, and the use of one's body as well as one's mind. They entail a social dynamic, technical skill acquisition and the communication of knowledge acquired from personal group experience.

Dialogue between the learning subject's situated knowledge and the established corpus of skills and wisdom in a particular field is essential. This dialogue, whether in a factory or a school, must constantly face

changing technology and demands of the labour market, and gives rise to fresh ways of thinking about learning in general (Mjelde, 1987:219, 1990, 1993, 1994).

At the workplace, the actors either employ or are employed and most teaching occurs among the employed. Yet here the knowledge of the employer is usually not divulged to the workers, and the power to implement new processes is held in the hands of the employers. Yet, as indicated in the job situation described above, "the standpoint of knowing" involved relationships between the individual and the production task, relations with machines, workmates, and management. These are the aspects of the lived situation where "...the concerting of one's experience in the experience of the other" (Smith 1996:172) enter into coordinated action. The knowing subject, in the industrial workplace, is located in a lived world not only with both theory and practice, but also with the intersection of knowledge and power. From this perspective, the challenge for vocational education is one of devising effective ways to appropriate academic knowledge such that, in Smith's terms, the learning subjects can more effectively concert their lived experiences with those aspects of the experience of the academic tradition which they, as potential employees and journeymen, will need in order to master the new electronically based technology and work processes. Activity pedagogy and workshop-style learning provide a profitable approach to these challenges.

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TEACHING ONLINE: A NEW SKILL SET

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Introduction

According to an NUA Internet Survey, 70% of all higher educational institutions offer some kind of online distance learning, but professors express mixed feelings about its effectiveness and their willingness to engage in it. 54% of the faculty at Florida Gulf Coast University, for example, felt that distance learning was not an effective alternative. They complained that much more time was required to teach, particularly on e-mails to students.

Utilizing technology to reproduce and reinforce traditional teacher-student relationships in interaction with a set curriculum, examples of which can be found in almost every institution, is becoming problematic. Those engaged in delivering online learning are realizing that they need to transform their own paradigm of teaching, and learn new skills in order to function more efficiently. Palloff and Pratt (1999) say of this new paradigm, "The development of community as part of the learning process helps to create a learning experience that is empowering and rich. It is essential to impart the importance of this process to faculty in order to maximize the use of the electronic medium in education. Without it, we are simply recreating our tried and true educational model and calling it innovative, without fully exploring the potential this medium holds." (p. 20)

Facilitating this paradigm shift and the development of new skills is not often considered in the recruitment and preparation of online educators. In this paper, we provide a framework for educators who are and will be faced with facilitating online learning, by introducing the ideas of other online educators that we have found valuable. Interspersed with this will be our practical experience and recent research into the actual experiences of online learners (Dewar and Whittington, in press). The quotations that introduce each section of the paper are compilations drawn from our own experience. We introduce direct quotes from the research we are currently doing in other sections of the paper.

Developing a framework

The majority of our online teaching experience has been with mature adult learners pursuing graduate degrees, and our approach has been informed by adult education concepts. In that regard we faced many of the same challenges that any adult educator, regardless of context, faces. Helping learners discover how their own thinking plays a role in determining a rewarding and successful learning experience is central; the facilitation and development of self directed learning is certainly another. We are also concerned with developing a supportive learning community. In our experience, the online environment is one which forces these issues to the surface more quickly and powerfully than most face to face (f2f) settings.

Several recently published works introduce similar concepts and perspectives. Building Learning Communities in Cyberspace by Rena Palloff and Keith Pratt (1999) is an engaging, provocative and practical look at the complex realities of facilitating learning in online environments. Drawing on community theory, constructivist learning, transformational learning, and their own research and practice as online learners and educators, they discuss how to create an online learning community that fosters collaboration, dialogue, reflection and transformational learning. They suggest that successful facilitation online requires honesty, responsiveness, relevance, respect, openness, and empowerment, and provide numerous examples of how this can be done.

Gilly Salmon's (2000) *E-Moderating: The Key to Teaching and Learning Online* is another excellent text. Salmon's book is based upon her experience and expertise developed while working for the UK's Open University. The book covers issues of recruitment, training and development of "e-moderators" along with over 70 pages of extremely useful "Resources for practitioners". Her competency matrix of skills required by online educators (page 40) addresses dimensions, such as technical skills, not discussed by Palloff and Pratt. The vertical axis of her matrix lists the qualities or characteristics of an e-moderator; these include an understanding of online process, technical skills, online communication skills, content expertise, and personal characteristics. The horizontal axis represents developmental levels; these include confident, constructive, developmental, facilitating, knowledge sharing, and creative. She suggests recruiting for columns 1-2 (horizontal axis), training to columns 3-4 and developing online tutors to columns 5-6.

We use Salmon's characteristics as a framework to introduce our observations and experiences.

Understanding of online process

Fear is getting in the way of me connecting with other people. It feels so public to post notes. I'm not sure I have anything of value to add to the conversations, and everyone else seems so much smarter and articulate than I am. (an online learner)

I didn't realize until halfway through the course that we hadn't even spent time at the beginning introducing ourselves. No wonder it still feels like we are a group of strangers. (an online facilitator)

Taking an online course as a learner first is probably the most effective way to understand the online process. Educators who don't have this experience firsthand can underestimate the chaos and confusion that accompanies one's first foray into online learning. We've found that the imposter syndrome (Brookfield, 1990) referred to in the opening quote, and fear of computers almost paralyzes some online learners. Also, many learners assume that the online environment will be cold and isolating and not that effective; challenging them to reframe their assumptions, and being patient with their insecurities during the first part of a course is critical. Similarly, developing a warm and engaging personal style of communication is central to easing the anxiety learners will bring. Some online educators make the mistake of composing conference notes that emulate their academic writing style; this is doomed to reinforce the beliefs that learners have about a cold and impersonal learning environment.

We've also noticed that some learners have a difficult time developing a "public voice" with which to communicate effectively online. Many learners will rewrite notes, only to never send them because they are unsure about the value of what they're saying. Other learners will quickly "disappear" if no one personally answers a message they have posted. Palloff and Pratt (1999) address a similar concept in their discussion of developing an electronic personality as a necessary component of becoming a successful online learner. In our research, some learners comment on the issue of trust as it relates to developing a comfort in communicating online. As one person noted, "How one establishes trust in an environment that is largely anonymous or hidden and may mask all sorts of data, would seem to be the \$64 question."

Closely related to developing the confidence to post one's ideas online, is to offer conflicting or constructive feedback online. While educators definitely have a role in providing honest and constructive feedback, how it is done online requires more sensitivity. Our research suggests that how a learner responds to feedback may be related to one's overall learning style and personality. One learner noted that, "... and it was the instructors' comments ... just not knowing them made me sensitive to whatever they said - it wasn't necessarily that it was negative - it was just the fact that I hadn't met them face to face that made it harder for me to accept the feedback they were giving me." Other learners suggested that this was not an issue for them.

There is one other factor that has begun to influence the successes of our online classes in recent years. While not directly related to the online environment, it often gets blamed on it. Many of our learners are mid career professionals taking master's degrees part-time. A number of these learners have full time jobs, are parents, and continue with volunteer work. They then add two online courses per semester to their lives, without necessarily taking away any other responsibilities. We've had many conversations with learners who "hate the online environment" only to discover that it is actually their lack of time that is creating the stress for them.

Technical skills

I've already gone through two toner cartridges printing all of the messages from the course. By the time I print everything out, and read through the messages making notes on them, it's midnight. I haven't even begun to compose my required postings for the week. (an online learner)

Someone showed me how to use Newsgroups and gave me a course outline from the previous semester. The day after the class started, I checked into the introductions newsgroup and found 30 messages. Well, I just turned off the machine and wondered what in the heck I had gotten myself into. (an online facilitator)

Palloff and Pratt (1999) suggest that teaching online takes three times as long as f2f does. Many practitioners reinforce this notion; some universities consider teaching one course online to be the equivalent of teaching two f2f courses. When we question educators as to their technical skills, we sometimes find that they have

not developed the online skills that would help them effectively deliver an online course. The following is a list of skills we recommend all online educators have; we also suggest our learners develop these skills.

Keyboarding

This is an obvious first skill, but often overlooked and not recruited for in our experience. Being able to touch type is not a luxury; it is a requirement for success in the online environment. An additional skill is being able to compose online. Many of us may have learned to type, but wrote things out longhand and then typed them. The advent of word processors and subsequently personal computers encouraged many of us to save time by learning to "think and compose" directly onto a keyboard. Since reliable and efficient voice recognition software is still some time off, learning to compose online is something we suggest learners and facilitators alike develop before they go online.

One learner in our research noted of her process

In the beginning, in my first course, I was quite nervous about putting my stuff out - and I'd spend my whole weekend tearing my hair out and writing and writing - and I would write it all out, because I needed to do it by hand to be able to think, I guess. And so I would write it all out and I would write and write and write, and then I'd put it on the computer and then I would print it and then I would go over it again and I would slash and burn and then I would rewrite. I would have to do that several times - it would take me a whole day sometimes just to do you know, like this 150 or 350 words that we had to do. And part of it was learning, as you said, it's learning to just be that concise and to get what you wanted to get across.

Taking running notes and the copy and paste function

Participating in an online course requires that our contributions to a group discussion be written out instead of spoken. While our discussion skills in f2f environments are quite developed, the skills needed to "discuss" in an online environment may take some time to develop. A useful approach is to keep a word processor open when reading through a document online or reading the contributions others have made to a discussion, and copying and pasting information from online documents to the word processor. (Windows Notepad is effective as it doesn't take a lot of memory to run.) Moving back and forth between the notepad and whatever is being read to make running notes facilitates composing a response later that incorporates and builds upon the contributions of several people. It also ensures that messages aren't "lost" by composing directly into a conferencing system; as most of us know, systems can and do crash.

To print or not to print

There is considerable debate in most online circles about the printing issue. Despite the resistance and cries of "my learning style requires hard copy", those learners of ours who have taken this challenge seriously, have found it of tremendous value. Learning to read, annotate and respond online saves hours (and trees). In order to facilitate going paperless, one also has to develop and use an organized electronic filing system and utilize the annotation features of word processors. Many of us now advise graduate learners at a distance. Developing this skill also facilitates effective time management while reviewing drafts of projects and theses.

Those learners who take up the challenge to develop these online skills tell us it has been difficult, but worth it. They suggest that it has helped them get "settled" and begin to focus on the content and learning experience of the course.

Online communication skills

What still concerns me is that some institutions and educators think that the technology replaces the need for humanness. I think more conscious effort needs to be extended so that the technology fades into the background and we communicate with people more personally and humanly. (an online learner)

I have been surprised at some of the notes I receive from learners. I doubt that they would ever say such things to me f2f. Learners need to recognize that there are real people behind the email, and learn to deal with their frustrations and emotions in a more effective way. (an online facilitator)

Communicating online is clearly different from communicating face to face. Body language, hand movements, other visual cues and tone of voice are all missing from an online message. Often dialog can become stilted, over polite and lack any depth of feeling. The reverse is also true; people forget that there are real people behind the messages and compose notes that are overly harsh or critical. As one of our research participants noted, "What I think I need to develop to better work with the online environment is to temper my somewhat brutal style with respect and consideration for the ideas of others."

If online communication is to support the development of trust and community then the educator has the very difficult task of encouraging freedom of expression (and freedom of thought) while at the same time ensuring that the dialog remains respectful and constructive. Using a personal tone and emoticons and acronyms can model effective communication for learners. Educators can also help develop personal and meaningful communication by not worrying too much about the way messages are written. Forcing word counts and correct use of English can inhibit free flowing, constructive dialog. Remembering that people do not speak in grammatically correct ways while engaged in dialog in f2f settings helps put this issue in context.

Reframing feedback

We have become quite accustomed to almost instant feedback in f2f learning situations. If we make a comment, we usually make eye contact with other members of the class and see them acknowledge us non-verbally. We also get pretty instant verbal feedback to our contributions.

This is not so in the online world. It's common to not hear back on contributions for several days. This is very disconcerting for facilitators and learners new to the online world. They wonder if anyone has read their posting, what they thought, if they agreed/disagreed, did people think they made a thoughtful contribution and so on. So, part of getting used to the online environment is reframing the feedback/response time.

The other challenge is that it is not possible for everyone (and especially the facilitator) to acknowledge every comment that people make. Again, in a f2f situation, by making eye contact and other non-verbals people come to know they've been heard. There really isn't an equivalent in the online world (the only solution would be for everyone to send a note saying, "I read this" to everyone else .. this simply isn't feasible).

Some conferencing software will deal with the issue of whether or not something has been read through a type of "history" function. We would recommend that educators clearly outline response times to learners (eg. Personal email is responded to within 2 days), so they know what to expect. For learners and facilitators alike, however, it may be useful to think of our conversations within a context of days, instead of minutes. Returning to the art of writing and sending letters, with the inherent time delays, is a reminder of how we might view online communication.

Content expertise

This independent student centered learning is all very well, but I really appreciated the input, expertise and direction of the facilitator. (an online learner)

I am amazed at what my learners find on the WWW. What I have to offer them simply because I'm the facilitator doesn't mean much anymore. I have to acknowledge what they bring to the course, and help them develop the skills to determine the validity of what they are reading and learning online. (an online facilitator)

Of course, along with online facilitation skills it's important that online educators have expertise and confidence in the subject matter. Learners need to be reassured that a knowledgeable facilitator is leading them. It is clearly important to be able to ask probing questions, engage the learners in authentic knowledge building tasks and give reassurance when they have understood a concept. In the online context, content expertise also includes knowledge of useful online resources and how best to use them to support a community of learners. This will involve creating tasks for students to engage in, either individually or in groups, that will help them fully understand the material being studied.

If online educators are involved in formally assessing learners' contributions then clearly it is important for them to have the confidence of the learners. This is sometimes harder to develop in an online context. In formal educational settings the esteem of the educator is often explicit; for example, via visible signs of academic status. These cues do not exist in online courses and it is important for educators to remember that respect must be earned again and again.

Personal characteristics

Some personal habits such as getting overly frustrated, giving up too easily, taking things too seriously and expecting the facilitator to tell me what to do are probably getting in the way of my enjoyment and quality of learning in the online environment. (an online learner)

My experience teaching online has humbled me. I didn't realize the kinds of inaccurate assumptions I held about my own learning (and that of the learners) until I started facilitating online. (an online facilitator)

Developing online skills and, in particular becoming paperless, requires a fundamental paradigm shift. Our experience and that of our learners is that the online environment is often a catalyst for examining how we REALLY learn. Many of our learners note that they learned more about learning online in their first course than the actual course content.

Learning to learn (or metacognition as it is also called) is probably one of the most important personal characteristics of an effective online educator. Our understanding of learning to learn is that it is a continual process of action, reflection, self-insight and interaction with others. According to Candy (1990), there is no agreed upon definition of learning to learn. Rather, learning to learn is defined according to how one has framed the concept, and this varies across discipline and philosophical orientation. He provides the following compilation of definitions:

Smith (1982) states that "learning-how-to-learn involves possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters," (p.19).

Kolb, renowned for his work on learning styles, states that "continuous, lifelong learning requires learning how to learn, and this involves appreciation of and competence in diverse approaches to creating, manipulating and communicating knowledge"(1981, p. 8).

Brown, Campione, and Day (1981) address the skills of learning in these terms: "In order to become expert learners, students must develop some of the same insights as the psychologist into the demands of the situation. They must learn about their own cognitive characteristics, their available learning strategies, the demands of the various learning tasks and the inherent structure of the material. They must tailor their activities finely to the competing demands of all these forces in order to become flexible and effective learners" (p.16).

Candy goes on to suggest that there are common learning to learn features:

- lifelong process
- developmental process
- involves an acquisition of a repertoire of skills, understandings, attitudes
- involves entering into the deep meaning structures of material
- in advanced forms it leads to critical awareness of assumptions, rules, conventions and social expectations

Finally, Candy suggests there is one axiomatic principle - it is the perspective of the learner that counts. He points out that:

Ironically, therefore, a person who has come to define himself or herself as lacking ability will bring the same mind-set and self-image to bear in acquiring new learning approaches, which may further reinforce a sense of inadequacy and failure. One of the greatest challenges confronting those with an interest in learning to learn is to transcend such self-imposed limitations and to give learners, as Archimedes put it, a new place to stand from which they can move their respective worlds. (p. 57)

In our view, Candy's observation is especially true for adults moving into online learning and education. How many of us grew up with computers and had opportunities to experiment with new technology? How many of us have said, "I can't program my VCR." How many of us (and how many times!) have said during a new online experience, "I'm not very good at this. I don't know anything about computers. I don't understand this. This is too impersonal and frustrating. This is too complicated. There are too many problems with the technology." and so on. Changing this type of self-image is exactly what Candy is talking about.

Robert Smith (1991) suggests that learning to learn involves both intrapersonal and interpersonal processes of awareness, self-monitoring and reflection. The ongoing development of these skills leads to:

active, confident, self-aware learners who carefully monitor learning-related activities and continually reflect on outcomes and possible adjustments in tactics. They demonstrate flexibility....are open to new ideas and experience...skills in transferring what is learned to other situations....can identify personal rules and myths....have learned to think critically and to review assumptions about learning and knowledge. (p. 11)

Peter Vaill (1996) suggests that continual learning today demands that learners adopt a reflective beginner approach. Many adults have high expectations of how quickly or painlessly they should develop a new skill. They often do not permit themselves to be beginners. This is especially true of educators moving into the online environment. Because they have considerable f2f experience they assume they should move painlessly into the online environment instead of maintaining a sense of humour about their sometimes "lamentable state of beginnerhood" (Vaill, 1996). Vaill provides a helpful list of characteristics of reflective beginners in his book.

Related to the notion of being a beginner is the ability to not take things too seriously, in essence to return to childlike tendencies of "playing". Many of our learners have commented that their children approach the computer as they would anything else, with a sense of adventure and play. They aren't afraid to take risks and experiment if things don't work out. Online facilitators and learners need to develop a similar approach.

Conclusion

Our experience is that teaching and learning online requires patience and the willingness to learn different skills. As was already mentioned, we recommend taking a course as a learner first. Assuming that teaching online is a new skill set instead of an adaptation of existing f2f skills is helpful. Developing online technical skills and being prepared to deal with a "shifting learning paradigm" will ease the transition into online facilitation. Finally, reading what others have researched and written is important. We highly recommend both Palloff and Pratt (1999) and Salmon (2000).

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SPIRITUALITY OF WORK: THE NEW OPIATE OR A POSTMODERN SEARCH FOR MEANING IN LIFE?

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Over the last 10-15 years, a variety of scholars and writers have encouraged us to seek a path of spiritual discovery through the work that we do. We are asked: What is your work, your passion, your calling? What is the relationship between your inner self and your self as a worker? (Richmond, 1999). Furthermore, this interest in the spirituality of work has sought to foster a re-examination of the way we prepare workers, and how we organize and structure the workplace. While it is not clear the extent to which these ideas have permeated the structure and organization of work (Mitroff & Denton, 1999), the number of publications, conferences, and listservs devoted to this topic demonstrate its pervasiveness in contemporary society. Some scholars, however, suggest that this movement is little more than a contemporary version of Marx's notion of religion as the opiate of the people, what I refer to as the opiate hypothesis. That is, a spirituality of work represents a corporate attempt to mollify workers into accepting and cooperating with essentially oppressive and exploitative work conditions.

The purpose of this paper is to argue for a re-thinking of the meaning of spirituality of work within contemporary society. Both this movement and its critique suggest a postmodern spiritual vision of work, one that is grounded in the notion of soul (Moore, 1991; Sardello, 1992; Ulanov, 1999), and one that beckons us to participate in "a communion of ecological, social, and divine creativity" (Holland, 1989, p. 4). Although there are clearly potential dangers in this movement for workers, we also presented with a potential, as Fenwick (1998), suggests, to rethink our understandings of work, learning, and spirituality.

The crisis of meaning in work

We might think of the cultural surge of interest in a spirituality of work as a response to a crisis in the meaning of work. A remarkable number of American workers report feelings of dissatisfaction with what they do for a living, or that they do not enjoy their work (Sinetar, 1987). During a recent blizzard that brought worklife to a virtual standstill on the Northeast Coast of the United States, a bank worker, playing in and enjoying the snows of New York's Central Park, was asked by a National Public Radio reporter what she would be doing were it not for the blizzard. With a downcast tone in her voice, she bluntly replied "Working...bored to death." Workers are bored, frustrated, constrained, and dulled by what they do. Laden with the responsibilities of being task-oriented and productive, workers' lives fill with the needs of everyday life: "Everywhere I go it seems people are killing themselves with work, busyness, rushing, caring, and rescuing. Work addiction is a modern epidemic and it is sweeping our land" (Fassel, quoted in Fox, 1994, p. 26). Worldwide, managers and workers lament an often frightening decline in commitment and loyalty - both in terms of worker loyalty to an organization, and an organization's loyalty to its workers (Kanter, 1991).

Attempts to address this sense of malaise in the workplace, through such strategies as work redesign, performance management systems, and corporate restructuring or re-engineering, have been equivocal, at best (Bolman & Deal, 1991). Often, they produce heightened levels of anxiety, tension, depression, anger, and fatigue among workers (Ketchum & Trist, 1992). In spite of our best efforts to develop, train and motivate workers, they often perceive their work as a never-ending struggle, requiring them to "prove their worth constantly, to live in perpetual fear of losing their jobs, and to remain on constant watch, lest others around them impede their efforts or take recognition for their accomplishments" (McKnight, 1984, p. 139). Little effort is made to understand the broader, organizational and cultural sources of performance problems (Ketchum & Trist, 1992).

Studies suggest that these problems may be related to the individual's perception of work as a force of alienation and dehumanization in one's life (Aktouf, 1992; Hawley, 1993; Ketchum & Trist, 1992; Terkel, 1972). Work was once viewed as the base and key to life, an activity to be prized for its own sake (Corson, 1991). Today, however, beliefs about work reflect a perspective that the world is knowable, and therefore mechanistically reducible to its component parts. According to Unger (1987, quoted in Welton, 1991), "The classic idea of work as an honourable calling becomes work as instrumental activity without power to confer dignity or direction on a human life." In many workplaces, the self is split off from seeing anything meaningful in what one does. Work comes to be seen as meaningless and often boring or dreadful, and workers gradually slip into a sense of "self-estrangement" (Aktouf, 1992). Individuals value work primarily as a means to live, to contribute to an increased ability to consume. Increased work means increased purchasing power, resulting in a cycle which produces what Fassel (1990) refers to as the "overworked American." Rather than indicating a sense of loyalty or commitment to one's work, this frenzied pace of work

reflects the need to derive meaning not from our work but from increased capacity to consume. In discussing the elements of the humanized firm, Aktouf argues that "Alienation from work is the heart of the problem of workers' commitment and motivation" (p. 418), a theme echoed by more "mainstream" theorists, such as Ketchum and Trist (1992) and others.

Increasingly, managers are beginning to view such phenomena as absenteeism, poor work quality, lack of commitment, "Monday blues," or increased workplace violence as manifestations of this crisis in work - as a workforce which fails to view work as a vital component of their lives, or as the inward expression of their sense of self. They have implemented a number of strategies to address these concerns, including participatory management techniques such as self-management teams and total quality improvement efforts. Despite these efforts, however, resentment and alienation continues to increase among the workforce (Aktouf, 1992; Hawley, 1993; Ketchum & Trist, 1992). Aktouf (1992) raises a critical, and often overlooked, consideration: rather than this technical focus on learning "how" to motivate workers, he asks whether it wouldn't be better to spend time understanding "why" the worker is so little motivated. As he points out, "to raise the question in this way...is to question the very meaning of work" (p. 420). Continued problems in the face of aggressive attempts to address them suggests a need for a fundamentally different way of thinking about the meaning of work and the organization's role in how meaning is shaped and reflected in organizational structures and processes.

Spirituality of work and its critique

The evidence for growing interest in a spirituality of work is overwhelming. It is manifest in numerous books and articles, conference presentations, e-mail listservs, association interest groups, prescriptions for organizational interventions, and consulting practices. Proponents of a spirituality of work argue that a search for meaning in life is a fundamental concern in adult development and learning (Merriam & Heuer, 1996). Furthermore, this search is essentially spiritual, "expressing a yearning to connect with a community, a higher power, or a transcendental energy - and to liberate this energy within one's self (Fenwick, 1998, p. 64). This yearning represents a reaction to a culture grown sick with rampant materialism, alienating competitiveness, rugged individualism, and loss of community. One of the ways in which this spiritual search is being manifest is an increased interest in work as a location for the presence and practice of the spiritual. A spirituality of work draws our attention to the ways in which individuals *experience* work, its conditions, structure, organization, and its relation to the individual worker. Unlike a prevailing tendency to locate problems of meaning or performance within individual workers, the emerging spirituality of work literature suggests that commitment to work depends as much on the way work is experienced as it does on the individual worker.

From a spiritual perspective, work expresses a particular relation of our selves to our work, and reflects a deep, inner capacity to see meaning in what one is doing and to approach one's work as an expression of one's inner self. Our work represents a "way of being," moving toward one's fullest participation in life, and contributing to the processes of individuation, self-actualization, and the potential for self-transcendence. Work as right work embodies self-expression, commitment, mindfulness, and conscious choice, and becomes an outward expression of our true inner selves (Fox, 1994; Hawley, 1993; McKnight, 1984; Sinetar, 1987). It represents a kind of work that responds to an essential human need, to be a part of something larger than oneself, to feel connected with others, to feel needed and valued. Having a sense of a transcendent purpose - one that goes beyond oneself - provides us with a source of enthusiasm, energy, and goal (McKnight, 1984). Sinetar (1987) believes that "our right work is just as important to personality health and growth as the right nutrients are for our bodies" (p. 7).

This view of a spirituality of work is consistent with the humanistic perspective dominant in current literature and a natural extension of HRD's espoused humanistic caring for the worker (Fenwick, 1998). The humanist view eschews any direct connection to particular creeds or religions. Proponents of this self-actualizing view of spirituality suggest that it expresses deeper, inner needs of the individual. For example, Turner (1999) suggests, "A humanistic environment creates a win-win situation for both the employees and the organization. If staff are happy, they will be more productive, more creative, and will enjoy a greater sense of fulfillment." Expressions of this approach to the workplace reflect an emphasis on such things as personal creativity, vision, values, and emotional intelligence. This approach to spirituality and the workplace reflects an alignment of organizational values and personal needs. It stresses the importance of workers being able to feel and experience a sense of purpose within their work.

Some writers argue that the workplace can be a location for expression of faith-based values and religious practice (Neal, 2000). Attention is placed on providing time and space for workers to engage in specific practices, which allow them to express or give attention to their spiritual needs or values. This might include setting aside time during the day for prayer or meditation and providing appropriate spaces for these

practices. Implicit in this understanding of spirituality is that one's faith and religious practice does not end at the company door but becomes an integral part of one's presence at work (Richmond, 1999). Happiness, satisfaction, and personal self-fulfillment are not necessarily key ingredients in this few of the spiritual workplace. Rather, there is a sense implicit in this view that faith is attained and sustained through despair and painful struggle, and the workplace is a key location for such struggle.

Regardless of the particular perspective adopted toward a spirituality of work, proponents stress the deep inter-connectedness between the nature of work, the workplace, and our most fundamental sense of being-in-the-world. Work as a location for the spiritual provides purpose and direction to what one does and an ultimate sense of meaning. It is a site for realization of our deepest human nature. This sense of work should be reflected in the way work is structured and organized.

Critics of this movement suggest that the spirituality of work movement is really another warmed-over version of the human relations movement introduced in the workplace over thirty years ago (Fenwick, 1998). Similar to this earlier movement, critics charge that the notion of spirituality of work is intended to manipulate workers to feel better about their work which, they argue, remains largely exploitative and oppressive. This critique charges that the spirituality of work movement individualizes the problem of meaning in work, frames what was previously regarded as psychological problems now as "spiritual" problems, and largely ignores political, economic and structural issues in the workplace. It is viewed as even more pernicious than earlier such attempts because now workers are encouraged to view work as service to God (Neal, 2000). De Gaulejac suggests, "Today it is as if the 'new managements' were trying to transform the psychic drives feeding the individual's narcissism into added work and an additional source of surplus value" (quoted in Aktouf, 1992). Much of the attention to the spirituality of work reflects a preoccupation with strategies for maximizing performance, rather than the need for a fundamentally different way of thinking about the meaning of work and how this meaning is reflected in organizational structures and processes.

There is much to be said for the opiate hypothesis and I respect and understand the dangers to which it points. Both popular perspectives on the spirituality of work, as well its growing critique, however, do not adequately address the fundamental meaning of this idea for our culture and times. In the popular view, concern for spirituality springs from a desire to address what many perceive to be performance problems in the workplace. In either this view or its critique, there is little evidence that the broader cultural implications, beyond the workplace, are recognized. Despite their growing popularity, most organizations simply do not acknowledge the ideas of soul or spirituality, so the danger of spirituality being appropriated as a corporate commodity has not really materialized. As Mitroff and Denton (1999) point out, organizations that do take these ideas seriously are exceptions. "[M]any organizations have lost sight of how to treat those who work for them as whole persons, as people with souls - and that they have lost sight of how to harness the tremendous energy that resides at the core of each of us" (p. 5). With a few exceptions, most organizations, despite it's apparent stirring, simply neglect matters of soul (Briskin, 1996).

In a sense, then, we might think about popular interpretations of a spirituality of work as an implicit critique of these existing organizational practices, rather than reflections of what organizations actually do or the ways in which they are actually structured. Together with those who have been critical of this movement, the spirituality of work literature offers promise for rethinking the meaning of work, learning, and spirituality in today's society.

The soul of the workplace

In this final section, I suggest that we understand the spirituality of work movement as a fundamental expression of soul within work and the broader world (Sardello, 1992). It is clear that worklife is often filled with considerable emotional discomfort and psychic pain, as well as sheer physical pain. Unlike most of the trends in HRD and organizational studies which seek to do *something about* pain and discomfort in work, a soul-based approach to spirituality of work seeks what to do *with it*. From this perspective, regeneration and transformation in work is achieved through the medium of pain. According to Sardello (1992), "political, social, economic, ecological, and technological programs will not alter the condition of the world one wit; they only rearrange what is already given into new patterns into which we are inserted as onlookers, strangers" (p. 9). He suggests that we see the world through soul in order to arrive at the soul of the world. Coming to the soul of an organization in this manner is through a kind of "imaginal seeing," rather than analytic and rational modes which dominate much of this practice and literature. When working with soul, images of the world begin to present themselves and serve to illuminate and enliven the outer world through their ability to connect it in a deep and spiritual way with our inner worlds.

Through the crisis of meaning in work, the soul of the world speaks to us, suggesting its sense of loss. It is not a greater connection with the divine which we seek, something that will lift us out of our malaise. Rather, it is work and the world that calls to us. Something is not right and we are being called, through cultural interest in the spirituality of work, to once again vitalize a critical dimension of the world being drained of its creative, life-sustaining energy. Thinking of spirituality of work in terms of the soul of the world leads to a "a direct relation to life itself, in all its forms...to name what we find and our relation to it...to see through the mediator to the interconnectedness of the reality that we experience directly...and enter into a devoted relationship with it" (Ulanov, 1999, p. 2). It is, in a very real sense, an attempt to reawaken soul in work and in our culture (Briskin, 1996; Fox, 1994; Whyte, 1994). While the opiate hypothesis remains very real, our cultural interest in a spirituality of work paradoxically creates an opportunity for greater personal and social freedom and emancipation.

In what ways might we understand a spirituality of work in terms of soul? First, soul underscores work as a bodily, earthly, creative act. In western industrialized nations, we tend to think about such things in dualistic terms (Holland, 1989). That is, within spirituality we separate the secular from the religious. Religious work is reserved for certain occupations. We do not think of ordinary, everyday work within the realm of the sacred. From the perspective of soul, however, we come to understand work as co-creative, thus an expression of the sacred. Through our work we are offered an opportunity to create, produce, and participate in a communitarian process. From the perspective of soul, we accept and embrace our earthly, material being and the work we do as a kind of prayer in itself. That is, work is not some lower form of being and existence, from which we try to escape for higher, spiritual pursuits. Rather, it is the essence of our spiritual being, the context and location for a spiritual life. In the west, we equate getting our hands dirty with lesser work, while using our minds is viewed as a higher form of work. This dualistic conception is reinforced by both our educational systems and our systems of reward. Yet, it is not hard to recognize the sense of centeredness and mindfulness that comes with work that fully occupies our bodies, as well as our minds. The soul of work rests not in its inherent nature but our disposition to it. Fostering a spirituality of work implies accepting and embracing its earthly, material nature as inherently sacred.

Soul also challenges the assumptions about the personal and the social we attach to work. Traditionally, we have equated the sacred and the spiritual with the personal and the private. Living our spirituality is something we do in the privacy of our own lives. It is an interior thing, not to be located in the busy, messy exterior world of work (Holland, 1989). Approaching the world of work through soul locates us within the everydayness of life. Rather than something we do only contemplatively and in isolation from others, spiritual practice becomes active, embedded within the practical day-to-day things of our work world. Thus, a soul-based spirituality leads us to seek communion with others, relationships, and connectedness. Creation through work becomes not a private affair but something we do jointly with others.

A soul-based approach to work also stresses the connection of who we are and what we do to the broader community and to the earth itself. The highly instrumental view of work which has become so pervasive in western societies stems, in part, from the separation of labor from its fruits. Labor is understood almost solely in terms of economic production. As a result, we pay less attention to what our work is doing to each other, our communal fabric, or the earth which sustains us all. Rather than creative, such an approach to work renders our relationships and the earth itself less fertile, at times even sterile. Work becomes viewed as part and parcel of the process of consumption rather than creation. Viewing a spirituality of work through the lens of soul stresses the need to attend to its creative capacity in all these spheres. Work brings us in direct relation to each other and with Mother Earth. Soul honors and fosters these connections and relationships.

Approaching a spirituality of work through soul helps us make important distinctions in the world of work. Clearly, the ways in which work is structured and organized may send soul packing. In its wake, as Moore (1991), suggests we are left with "obsessions, addictions, violence, and loss of meaning" (p. xi). Thus, we attend to the structures and organization of work not because they effect the bottom line but because they effect expression of the inherent spiritual and soulful nature of work. Second, we recognize that there is "right work" (Fox, 1994) and work that denigrates or degrades the person, the community, or the ecology. Right work invites and allows expression of the creative nature that is inherent in both who we are and in our earthly home. This means that we need to attend to how work is expressed at both the individual and social levels (Holland, 1989), in terms of our personal vocations and in the missions of our social organizations. From the perspective of soul, the personal and the social are mutually interdependent.

Conclusion

The growing concern about spirituality and meaning in our work and the workplace suggests that it holds cultural significance beyond that of just another ploy or strategy by corporate executives and managers to

duce the masses into yet higher levels of productivity and subservience. Even critics of spirituality of work such as Fenwick (1998) acknowledge a deeper malaise persisting within our collective lives, manifesting itself in the kinds of cultural symptoms to which Moore (1991) alludes - unbridled material consumption, working ever harder to fill a gnawing sense of emptiness that won't go away. Like the finger of the third ghost in *A Christmas Carol*, this concern points imperatively not to new techniques or strategies through which to add value but to matters of soul. In a sense, the soul of the work world is revealing itself to us through this movement. If we attend to its voice, we might hear its cries for work that reflects community and connectedness, but also demands from us inner work. Its voice is calling for the return to work of joy and vitality, authenticity and mutual respect, and an end to work that desiccates and destroys life. The soul of the work world is calling for work that nurtures and sustains creativity and for the elimination of workplaces and work that degrade and denigrate. Concern for spirituality of work invites us, as Sardello suggests, to face the world with soul.

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LEARNING TO WORK: BECOMING A RESEARCH SCIENTIST THROUGH WORK EXPERIENCE PLACEMENTS

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Introduction

There is a belief amongst employers, as evidenced by anecdotal discussions, that with any new graduate they take on there will be a substantial gap between the skills they have gained from their qualification and the skills they will need in the workplace. And that they will need to undertake substantial training before the graduate becomes useful. What if the graduate was able to gain those work skills as part of their qualification? Would that make their transition from academia into the workplace easier?

There has been increasing recognition over the second half of the 1900s of the value of gaining work skills in an integrated program of learning. This recognition has led to the development of large numbers of cooperative education (co-op) programs whose aim is to marry the academic learning within an educational institution with the practical learning of the workplace. These programs form a partnership between a student, and employer and an educational institution, and include periods of time when the student works for the employer in a field relevant to their qualification.

That these programs are effective has been shown by their operational success, showing tangible outcomes.. This success can be measured by a steady growth in the number and size of programs across many countries including New Zealand. In addition, research (Eames et al, 1996; Porter, 1982; Auburn, 1972; Henry, 1978-79) has identified positive outcomes and benefits to all parties in these programs. Students are able to apply their academic learning, enhance their career prospects and clarify their career choice; employers gain highly motivated and productive, temporary employees and a preview of potential future staff; and educational institutions gain enhanced industry links and student attraction.

There is much more evidence pointing to key operational outcomes of co-op programs (e.g. Hayes, 1978; Willis, 1980-81; Somers, 1995; Wessels & Pumphrey, 1995; Dubick, McNerney & Potts, 1996). What have been more difficult to ascertain are the educational outcomes from work placements. This difficulty has led to a paucity of knowledge about learning in the work placement, due in part to a lack of educational research expertise amongst those who run co-op programs, the co-op practitioners. The inability to place co-op on a sound educational basis has prevented clear recognition of work experience components as learning opportunities.

Co-op programs have often been criticized for their inclusion of work experience in an academic program, particularly within the university setting; the criticism based on the premise that the work component is not 'academic'. As Van Gyn, Cutt, Loken and Ricks (1997) point out, the traditional view is that co-operative education is an effective training strategy rather than an educational strategy.

Recently attempts have been made to ally cooperative education to social and experiential learning ideas. Some co-op practitioners (e.g., Heinemann, De Falco & Smelkinson, 1990) have looked to the theories of John Dewey and David Kolb, whose notions of experiential learning appear to offer a firm basis for the value of learning through work experience. Others (e.g. Van Gyn, 1996) have added Schon's (1983) concept of reflective practice and the use of reflection-in-action by students on work placements to the discussion of potential learning outcomes.

Previous research into the educational benefits of co-op by practitioners (e.g. Smith, 1965, Lindenmeyer, 1967) has been criticized as being too descriptive or having failed to control for dependent factors such as ability at entry to the program. Most of these studies have attempted to apply quantitative survey techniques and educational achievement instruments which, whilst providing some indicative data, have failed to take into account the diversity of different programs, and of work placements within these programs. They have also tended to concentrate on measuring changes in academic performance as an indicator of educational benefit, rather than the actual learning experiences that can occur during work placements. There is increasing recognition that qualitative methods may reveal a richer vein of data about the students' experiences in the workplace (Coll, 1998).

An understanding of the learning that can occur, how it might occur and who might contribute to this learning would help co-op educators to structure their programs to maximize the learning outcomes and to ease that transition from student to working professional.

The New Zealand context

A Co-op program in science and technology, the BSc(Technology) degree, has been offered at the University of Waikato since 1974 (Coll, 1996). The program has grown significantly over the past ten years, from 38 student placements in 1987 to 192 in 2000. Many employers offer student placements each year and many graduates are employed permanently by their placement company upon completion of their degrees. Research has shown that, of graduates available for employment, over 80% had secured positions before completion of their degrees and all graduates had secured positions within six months of completing (Eames & Meech, 1997).

The changing face of tertiary education in New Zealand, with increasing competitiveness amongst institutions for students and greater auditing pressure from central government, means that there is a need for co-op programs to be able to justify the inclusion of work experience components and to have a very clear understanding of how they help to prepare the graduates for the workplace.

In addition, the demands of the business sector continue to grow apace and the emphasis is on rapid delivery of service and adaptability to the global marketplace. Employers want graduates who can 'hit the ground running' and make a rapid contribution to productivity. Government and the employment sector will look to support those educational institutions which can deliver such graduates.

Enculturation into a community of practice

An understanding of the learning that can occur in work placements may also assist in developing better knowledge of how graduates are inducted into their chosen professions, and the critical elements that would allow that induction to proceed as swiftly and smoothly as possible.

The work of Jean Lave and others theorizes that learning is a socially situated process (Lave, 1991; Simon, Dippo & Schenke, 1991; Brown, Collins & Duguid, 1989) and that the environment of the workplace is critical to shaping the particular learning that the student can achieve. Lave (1991) argues that learning may occur by legitimate peripheral participation, where an individual enters a community of practice as an outsider or novice, and gains knowledge and develops mastery over time by observing and participating alongside the practitioners. This then leads to a gradual inclusion of the individual into that practice community. The positioning of undergraduate students legitimately and peripherally alongside professionals in co-op work placements appears to fit this notion.

As Billett (1994) points out workplaces are where 'learners are able to observe, participate and be guided by experts within an authentic culture of practice' (p. 9). Moreover Brown, Collins & Duguid (1989) point out that 'given the chance to observe and practice *in situ* the behavior of members of a culture, people pick up relevant jargon, imitate behavior, and gradually start to act in accordance with its norms' (p. 34). This emphasis on culture, or community, of practice provides a foundation for investigation of enculturation of students into science and technology communities of practice.

This paper provides a case study of one individual in a longitudinal study project and his enculturation into a community of practice of science research.

A longitudinal study

The case study is part of a longitudinal project that is following the learning progress and process of a cohort of students as they pass through their BSc(Technology) degrees at the University of Waikato. The study is employing an interpretive methodology and using interviews as the prime vehicle for data collection. All interviews in the main study are being conducted one-on-one with the author, are semi-structured and transcribed verbatim. Analysis is being carried out using a coding system and Excel spread-sheeting. The cohort was selected from all second year students in the BSc(Technology) program. Participation was invited in such a way that a balance was attempted across gender, across subject majors in proportion to the total population, and across a range of industry sectors.

A group of 22 students agreed to participate in the study, 12 males and 10 females. Each participant has been interviewed individually on at least four occasions as specified below in Table 1.

Table 1. Schedule of Interviews

Interview 1	Before beginning first placement, at end of second year of study
Interview 2	Towards the end of the first placement in the workplace
Interview 3	After first placement, and before second placement, while in third year of study
Interview 4	During second and final placement in the workplace

In addition five students were selected for more regular interviewing as case studies during their second work placement. This paper provides data from one of those case studies. A participant-approved pseudonym has been used. All interviews were taped and transcribed verbatim and participant validated. Excerpts provided here have been edited lightly for sense and coded at the end of each quote.

The interviews investigated the learning experiences of the students in their science and technology workplaces, and the integration of these experiences with their learning at university. This paper will focus on how one student perceived his learning about his science research workplace.

The case of Brian

Brian is a chemistry major and a high academic achiever, scoring in the A range for all his university courses. He is a New Zealand European and was 19 when he entered the program, a entering university directly after his secondary schooling. His parents had not been academic professionals.

Brian had two three month chemistry work placements over the summers of 1998-99 and 1999-2000. He worked in two different Crown Research Institutes (CRIs) in New Zealand. The CRIs are mainly government-funded and are individually focussed on a particular segment of New Zealand science research e.g. forestry, agriculture. Since their inauguration in 1992 they have been driven to a competitive funding model which has created a more applied focus to the research, and the imposition of business methods.

Learning to research

Within an educational institution, as science educators we are often constrained by the lack of time and resources in our desire to expose our students to researching in science. Large class sizes and limited equipment often mean that undergraduates are seldom given the chance to do practical research. The laboratory exercises that they do are rather confined to demonstrating principles and particular techniques. The graduates come out of this training with an awareness of what tools are used in science research but little or no actual experience.

Towards the end of his first placement Brian recognized this difficulty in learning how to research in a university undergraduate program, and the difference between his experiences there and in the workplace:

At university it's structured, where you're being taught the theory in the lectures and tutorials, and then in the labs it's very controlled skills, they sort of feed you skills, a skill at a time as it were. (In the workplace) it's sort of bringing together all the relevant skills, teaching you how to use different machinery as it becomes necessary, and often you're making leaps forward from what you've learnt at university. 12,15

Brian emphasized here the controlled nature of learning skills at university, the feeding of skills, as opposed as to the need-to-know environment that he encountered in the workplace. His second placement had a very applied focus and he was able to discern a difference between the type of research and researchers that he had previously been exposed to at university:

...I'm talking about the sort of technological product development that you get in a sort of an institute, that there's emphasis, at least this group's emphasis towards developing products. In the university we get exposure to people's research interests and most of the people I'm in contact with have more sort of I suppose purist research interests and they're sort of more into pure research with a little bit of applied but I'm coming into contact here with quite a lot of applied material and I can therefore make the link between the chemistry theory and the technological practice. 14.4, 5

Brian felt that the placement was showing him theory in action and giving him direct relevance to his studies. Earlier in the same interview he used the phrase 'a sort of real world context which you could never get in a university' when discussing his experience of the workplace. This appears to indicate that Brian believes that the university is not able to teach him about the 'real world' in the way that the workplace can. This would be particularly significant to students like Brian who see themselves as entering that real world as a graduate.

In his two placements Brian was immersed in scientific research for the first time and he identified some key characteristics. As many of us have experienced as researchers ourselves, his feelings ranged from excitement to frustration. He felt that he had been exposed to the practice of science in the workplace:

It has been very good, it has certainly broadened my horizons of scientific research and has given me a good perspective of how science works in the workplace and also how it's practised and individual styles. It has greatly increased my skill base in chemistry. I2,3

He had noted the existence of individual styles and began to discern that the community that he was on the periphery of was not homogeneous and that there was perhaps no *one* way to solve research problems:

I'm thinking about the approaches that different people take towards research, and the way in which they set it out and go about it which does to vary from person to person. I2,3

Over the course of his two placements he would be exposed to a number of different scientists and their research methods and was able to draw some conclusions about which methods suited his own personal style.

He also noted his discovery of the complexity of the nature of the scientific research process in his placement:

It has, its taught me that often the research can't be fully structured like right from the beginning with contingency factors having to be allowed for and often interesting sort of tangents might arise that are worth pursuing or can be pursued later. So it is sort of like a spider's web if you like of ideas and knowledge that have been generated. I2,3

It would be difficult to imagine how a student could come to this understanding without being immersed in a research situation. No amount of tuition and description could substitute for a personal discovery of the intricacies of the research process.

Brian also learnt how to 'play' in his research during his first placement.

I have found that it is quite common, at least in the group I am working in, to experiment quite loosely ie dabble, to try and see if different ideas will work before doing more structured analysis. Sometimes this trial and error process forms the basis for the experimentation and can throw up interesting results or new ideas that can be further investigated. This sort of work is helping to develop my investigative and experimental skills and is very interesting. J2, 11

For the first time Brian found himself in an environment where there were no clear end-points, no well-known answers to laboratory experiments performed by years of student classes. The exposure during his degree to this way of working provided Brian with a chance to find out how he feels towards research before he commits himself to a career. It has the potential to be greatly disturbing and almost frightening as the comforting boundaries of classroom science are removed. In Brian's case it was a great stimulus as he remarked in his journal towards the end of his first placement:

These new experiences have given me a greater appreciation of the research/experimentation process in action first hand and have generated in me a sense of excitement and a great deal of enthusiasm and interest, as I am at the centre of this research process. J2, 4.

However not all went smoothly for Brian, and the reality check was quite revealing for him. His placements taught him about the frustration of research:

Brian: ...research seldom goes smoothly and that often there's a lot of frustration and things don't sort of go well or turn out the way you'd like...

Interviewer: Was it surprising to you that things didn't go smoothly?

Brian: It was annoying. I guess it was slightly surprising. I guess I would have liked things to have gone a bit more smoothly because when you're at university, the little labs are quite structured and they've been done before so things tend to go quite smoothly because of that. I3, 11.

This disturbance in thinking has created a perceptual change for Brian about how research proceeds. Having previously been exposed only to laboratory work that proceeded as the class manual dictated and 'incorrect and unexplainable' results had been rationalized by the instructor in terms of operator error, this new experience did not fit with Brian's constructs of what happened during research experimentation. Interestingly, at the end of his second placement he had developed strategies to cope with the research not progressing as expected:

When it doesn't go smoothly your plans tend to collapse a lot, or part of them do, and you sort of just got to wipe those away and re-form a set of new plans to take you on. I always find that you have to think about 'What can I do next to further the research, keep the ball rolling', because its easy to get bogged down if things don't go right, trying to think of ways to get the ball rolling towards your goal. I4.2, 4

This type of experiential learning, where Brian, in conjunction with his supervising scientist, was able to experiment, obtain results, reflect on those results, fit those results into previous knowledge and develop a plan for moving forward with further experimentation, can be allied with Kolb's (1984) model. Through these experiences Brian was able to formulate a model for what a researcher is:

Brian: I think a good researcher is a person who is flexible and is able to adopt new paths readily and quickly when they need to, but at the same time can work out how to most efficiently use that time within that environment of uncertainty. To try and judge which avenues of investigation will reveal the best results the quickest.

Interviewer: And how do you think they arrive at that judgement?

Brian: A combination of experience, practice, yes having done that sort of research before, I think it develops some sort of judgement in what's likely to be a productive way to pursue the project. I4.2, 3

This combination of experience and reflection became a dominant theme in Brian's discussion of what led him to understand what it was like to do science research. By the end of his second placement, with a total of six months research work experience behind him, Brian felt that he had matured somewhat as a researcher, and developed new skills and a new way of thinking:

It's the ability to exercise judgement in research, to know what to pursue and what not to pursue, to know which techniques to use, which is a knowledge thing, to be able to do things systematically and methodically and at the same time to record everything very thoroughly, well I think that those sorts of factors, the factors in recording, the ability to contribute ideas about where the research is actually going, the knowledge that I've learnt about the general area, I mean all those things have increased, and my skill base, my techniques has increased.

After six months of work experience in research environments Brian was focusing on the importance of judgement, on the ability to make informed decisions about which research avenues to progress. He ascribed his learning of judgement to experience:

It's just experience, experience, experience and the more the better. I4.5, 14

This emphasis on experience permeated many of our discussions and it is hard to ignore the impact that Brian attributed to experiential learning in his placements. He felt the key was getting out there and doing it:

Basically I think the principal factor was actually doing it yourself, actually getting out there and doing the research yourself and then encountering the problems for yourself. But then that's the key to the hands-on experience with the process and you sort of find your way through yourself and it's quite rewarding. I3, 5

Kolb (1984) espouses the same idea when he asserts that 'a well-developed competence in active experimentation is equally essential for effective work in the science-based professions' (p. 184). Brian also acknowledged that the opportunity to work alongside practising professionals was an important contributor to the development of his research skills. He gave a good example of socially situated learning from his first placement:

I suppose the anecdotal stories that your supervisors give you about what they've done in the past and the problems that they've encountered and that sort of thing, it helps you to sort of flesh out your idea of the research process and the way people do things. I3,5.

The use of stories in a learning context to describe previously experienced situations that led to problem resolution was identified by Brian as a means of modeling a factor in the research process. He gave a second example in his second placement, in a different research organization:

Yeah, well working alongside them contributes to your knowledge and to your ability. You get ideas on ways of doing things from them, and so that helps you enormously you know. I4,5,
14

Brian was able to see the value of the transfer potential of the accumulated knowledge and skills of the practitioners around him to his learning of the practice of science research. As was noted earlier such learning is difficult to achieve within an undergraduate degree in an educational institution.

Conclusion

This case study has reported some evidence that students undertaking relevant work placements in an undergraduate co-op degree can learn about working in a particular environment. In this case Brian recognized a clear distinction between the way of working in science at the undergraduate level of the university, and the way of working in a science research institution. He identified some key attributes of scientific research from working alongside science researchers and the opportunities that he was afforded led him to an understanding of what it means to research in science.

The combination of experiential learning and socially situated learning provided Brian with new skills and a new way of working that could not easily be replicated in an educational institution. As Brown, Collins & Duguid (1989) noted it gave Brian a chance to learn the behaviour of a researcher and to develop a way of working and thinking in accordance with its culture. In six months, albeit in his own mind, Brian felt that he had gone some way to establishing himself in his community of practice.

This analysis of one case study within the larger longitudinal project offers an indication of the learning outcomes that could be achieved through co-op work placements. Further analysis of other case studies within the project will hopefully reveal other factors about learning to work and reinforce pedagogical reasons for inclusion of work experience within tertiary qualifications.

If nothing else his work placements engendered in Brian an enthusiasm for learning and a renewed passion for his subject, as this final comment illustrates:

This placement has been a wonderful experience which has equipped me with a whole range of new experimental, analytical and social skills that will be of great help to me in future employment. It has also helped to stoke the fires of interest and enthusiasm within me for chemistry and I will enter this year with a much clearer perception of chemistry in action in the workplace. J2, 14.

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A WORKING ETHIC? ENTERPRISE AND FLEXIBILITY IN THE CONTEMPORARY WORKPLACE

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Ethical behaviour is the outcome of the shared understanding that comes from belonging to a particular community and from embracing the practice of being a good person according to the rules of that community. (Starkey and McKinlay 1998: 234)

Trends towards greater flexibility in workplaces, labour relations and the provision of learning opportunities are to be found in a range of organisational, national and trans-national contexts around the globe (Edwards 1997 and 1998). These processes are developed in part through the public policies of national governments and international organisations. They are to be seen in economic policies that have resulted in the de-regulation of financial and labour markets. The approaches have been adopted within many employing organisations, in particular in large employers, some of which have adopted learning organisation and/or knowledge management strategies through which to enhance their competitive advantage – to maximise profit in the private sector and efficiency in the public sector. They are also to be seen in policies that seek to tie education and training more closely to the requirements of the economy, which is itself subject increasingly to global competition. In the process a globalised discourse and set of practices are normalised as increasingly the direction of change for all individuals and organisations.

Associated with these trends, it has been argued that there has been the attempt to inscribe an ethics of enterprise into both organisations and workers within those organisations as a condition for changing working practices. This paper will examine the arguments and evidence for and against the emergence of such an ethic and its relationship with the flexibility demanded of those within the workplace. Does an ethic of enterprise help to produce greater flexibility? Is flexibility a condition for enterprise? Might flexibility itself be said to be a technology of the self, an ethic for the conduct of conduct, through which individuals comport themselves in the workplace? What other ethics might be at work in the workplace? It is to an evaluation of these questions that this paper is addressed.

An ethics of enterprise

Flexibility is part of a range of discursive practices that have been deployed to re-shape organisations and organisational lives over the last twenty years. For some, this period has represented a fundamental shift from welfare state models of social development to one's more primarily focussed on enterprise. Within this, it is argued that subjectivities are themselves re-shaped, promoting a particular image of human beings as enterprising. Here

the self is to be a subjective being, it is to aspire to autonomy, it is to strive for personal fulfillment in its earthly life, it is to interpret its reality and destiny as a matter of individual responsibility, it is to find meaning in existence by shaping its life through acts of choice. (Rose 1998: 151)

It is the ethic of enterprise that helps to re-shape subjectivity and with and as a result of that, organisational change. Flexible learning plays a role in catering for enterprising selves and subjecting them to educational and training practices that instill flexibility and enterprise as desirable and desired ways of being. In providing flexible forms of learning, an aim is to develop more flexible learners and workers, who themselves are more enterprising. Ethics of enterprise and flexibility walk hand in hand.

Here, ethics is being used in the sense to be found in the work of Foucault, for whom ethics are not formalised moral codes, abstract senses of right and wrong, but are construed as the practices through which one evaluates and acts upon oneself, what Foucault refers to as 'technologies of the self'.

Ethics are thus understood as means by which individuals come to construe, decipher, act upon themselves in relation to the true and false, the permitted and the forbidden, the desirable and the undesirable. (Rose 1998: 153)

Insofar as enterprise is positioned as a principle of the 'good life', a range of technologies – including those of human resource management – are deployed through which human beings are positioned as enterprising, as capable of choosing lifestyles and that capacity to choose being both desirable and good. This ethics is

produced through the technologies of the self that seek to govern the conduct of conduct. Rose (1998: 154) summarises this well.

Enterprise here designates an array of rules for the conduct of one's everyday existence: energy, initiative ambition, calculation and personal responsibility. The enterprising self will make an enterprise of its life, seek to maximise its own human capital project itself a future, and seek to shape itself in order to become that which it wishes to be. The enterprising self is thus both an active self and a calculating self, a self that calculates about itself and that acts upon itself in order to better itself.

We might add to the list of rules for everyday existence, the requirement to be flexible. We might also suggest that one of the calculations in which an enterprising self engages is that surrounding their own learning. One needs to adopt an active learning approach to life and calculate the learning through which fulfillment or empowerment can be gained.

Rose's views might seem to abstract the individual from organisational and social contexts, yet he is deeply concerned with the practices through which the enterprising self is positioned as an ethic. In particular he has studied the shifting practices through which 'work is constructed not as a constraint upon freedom and autonomy, but as a realm in which working subjects can express their autonomy' (Rose 1998: 160). This is theme that has also been explored by Townley (1994) in her Foucauldian analysis of the practices of human resource management and by Casey (1996) and du Gay (1996) in their explorations of changing workplace practices and identities.

In her study of a large manufacturing multi-national in the USA, Casey (1996: 320), for instance, argues that:

the archetypical new Hephaestus employee is one who *enthusiastically* manifests the values of dedication, loyalty, self-sacrifice and passion for the product and customer, and who is willing to the extra mile for his or her team.

This entails an active subjectivity aligned to organisational goals which encourages each individual to apply the idea of continuous improvement and development to themselves, to produce what Casey refers to as 'designer employees'. Here the alienation of industrialisation is displaced by an enthusiasm for work wherein there is an affective investment of the self in and through work. The conduct of conduct is governed by a desire to be enthusiastic in one's work practices. This has been particularly marked in those organisations involved in practices such as employee development schemes, action learning sets, quality circles and the like. The cost of this affection for many is an intensification of work and increased stress levels.

However, this is not the story conveyed in the ethic of enterprise. Here the workforce, like the workplace is deemed to produce a virtuous circle of flexibility and enterprise, practices supported by the constant reflexive process of change and development. In his study of the retail sector in the UK, du Gay (1996) argues that workplaces are increasingly characterised by forms of governmentality associated with 'an ethos of enterprise'. This ethos is crucial to the development of discourses of flexibility among nations, organisations and individuals in support of economic competitiveness. As well as workplaces, workers are subject to practices of management, appraisal and development that position them as enterprising, engaged in an 'enterprise of the self'. In this position,

no matter what hand circumstances may have dealt a person, he or she remains always continuously engaged... in that one enterprise... In this sense the character of the entrepreneur can no longer be seen as just one among a plurality of ethical personalities *but must rather be seen as assuming an ontological priority*. (du Gay 1996: 181)

Exposure to the risks and costs of their activities are constructed as enabling workers to take responsibility for their actions, signifying a form of 'empowerment' and 'success' within the organisation. Nor is this restricted to careers alone, as the whole of life becomes inscribed with the ethos of enterprise. Reflexive monitoring of the self turn the process of biographical formation into an enterprise wherein

certain enterprising qualities – such as self-reliance, personal responsibility, boldness and a willingness to take risks in the pursuit of goals – are regarded as human virtues and promoted as such (du Gay 1996: 56).

Changing people's values and norms becomes a key dimension of organisational change – in which the directions and processes of change are formed through the production of a shared ethic that both exposes all those within the workforce to the risks of failure and failing to change, but also invests those within the

organisation with shared goals and aspirations. The ethic of enterprise, like other ethics is both prescriptive and powerful. The practices through which it is produced may be many and varied, but they entail the provision of certain forms of learning opportunities in ways that both promote flexibility, but also model it.

For du Gay, this contemporary form of governance of the self as an enterprise is related to the increased role of contractualism in social relations. As Yeatman (1994: 9) argues,

marketisation, privatisation, devolution, and contractualisation... fit the modern regime of regulation, namely one where government works by means of the self-regulating capacities of citizens as these are informed by the normalising effects of professional expertise among other things.

Enterprising identity and the self as an enterprise for workers emerges as organisations become subject to measures of performance in the delivery of services and goods through a contract. Rather than being governed simply by bureaucratic and hierarchic procedures wherein decisions are taken elsewhere and handed down to be implemented, workers are given 'responsibility' for achieving certain outcomes efficiently and effectively which are then audited. Here

discipline is now more immediate and everyday with little overt intervention on the part of the corporate bureaucracy. The employees police themselves. The decentralisation and internalisation of discipline deepens the processes of employee identification with the company. (Casey 1996:326)

The micro-practices of organisational life are internalised and reflected back on individuals as norms by which to be judged and regulated. They are both made more visible to others and to themselves. As Collinson and Collinson (1997:392) say, in their study of the impact of down-sizing on managerial employees,

by mobilising the subjectivity of managers such that time sacrifice was viewed as confirmation of masculine and hierarchical identity, increased surveillance could be seen to have achieved its objective of intensifying managerial commitment.

This they associate with presenteeism and other conspicuous displays of commitment, wherein the norm of enterprise is inscribed, even to the point where this might discourage non-conformity and innovation.

Discipline therefore is not simply imposed nor is it always complete. If it was, there would be no reflexivity and no need for enterprise to be deployed as an ethic through which to frame the good life. Indeed, despite their familial resemblances, enterprise and flexibility do not represent a single coherent chain of signifiers. The incompleteness of the ethic both illustrates the exercises of power in its deployment and provides the possibly for alternatives. Recalcitrance, apathy, resistance and even playfulness remain possible. Even in relatively restricted skill areas such as restaurant waiting research indicates that

service encounters are shown to have a performative character and thus one can think of those kind of workplaces as a stage, as a dramatic setting for certain kinds of performance, involving a mix of mental, manual and emotional labour (Lash and Urry 1994: 202)

Workers may perform their roles as enterprising and flexible workers as fully as required by organisations, but nonetheless be conscious that it is a performance. Here the performing self may not always be the enterprising self, a position that indicates that du Gay may have over-generalised his findings in suggesting that an ethos of enterprise has come to govern all aspects of life. To take Casey again (1995); she identifies a typology of subjectivities - the defensive self, the colluded self and the capitulated self - emerging in the workplace she researched. Earlier, Heelas (1991) identified the enterprising self as only one among four characters specifically of British life, the others being sovereign consumer, the active citizen and the conservative or traditional self. Collinson and Collinson (1997: 395) found that the managers they studied liked to give the appearance of compliance and suggest that 'the management of appearances... came to be of paramount importance; a defensive response intended to manage corporate reputation and image'. Research on gender and sexuality also indicates the ways in which masculinist and heterosexual performances continue to cut across a somewhat ahistorical notion of the enterprising self (Mac an Ghail 1999, Cohen and Musson 2000). The ethos of enterprise is not apparent here and the performance is not always fully or necessarily in line with the scripts of organisations. Thus, while the notion of the enterprising self provides a powerful explanatory framework, its operation as an ethos may be more restricted. Indeed it may be more appropriate to consider an ethos of flexibility as providing a powerful alternative through which to explore organisational change.

A working ethic?

To what extent does a discourse of the ethics of enterprise contribute to that about which it speaks? To what extent does it itself become part of the signifying practices attempting to instill an ethic of enterprise into contemporary organisational practices? How far does critique also add to the naming of practices in ways that contribute to their further deployment? To what extent has the ethics of enterprise been interpellated into the everyday practices of organisational life?

In their review of the literature on notions of the learning organisation, Keep and Rainbird (1999: 184) argue that

Despite the textbook models of worker empowerment and the demands by some employers for workers with better skills in communication, problem solving and creativity, in reality in many organisations... it continues to be the case that managers undertake the planning, thinking, design and decision-making elements of work, while the non-managerial workforce get on with following tightly defined procedures and taking orders from above.

Here it would seem less an ethic of enterprise than more traditional notions of labour market discipline at play, in which it is an ethic of deference that is deployed, one that has often been challenged through the practices of trade unionism. Rather than seeking to align worker subjectivities with the goals of the organisation, it is the training and disciplining of the worker as 'docile bodies' (Foucault 1979) that is to the fore, subject to an ethic rather than being the subject of an ethic. It would seem therefore that there may be a range of ethical positions and positionings at play in organisations. For instance, Keep and Rainbird (1999: 184) point out the implications of different organisational approaches for the role of managers.

Traditional models of management have cast managers as policemen and women, spies, controllers, dispensers of reward and punishment, sources of wisdom and expertise, order givers and arbitrators between competing claims. The new model of management tries to paint them as teacher, coach, mentor, facilitator, resource controller and 'servant' of the team. It is not obvious that the majority of existing managers, recruited to perform the very different tasks of old model [sic], possess the skills, behaviours and attitudes required to perform these new functions.

It is not only the workers who may be subject to diverse ethical framings, but also managers themselves and their capacity to work within certain ethics, to conduct conduct in an enterprising way, cannot be taken for granted. Thus, despite efforts

To get employees to work harder/longer or to get them to do more by working smarter ways, the evidence suggests that many perhaps most, British organisations appear to prefer the tried and tested route of increasing working hours. (Keep and Rainbird 1999: 185)

Three things are suggested by this. First, there are different ethics at play in organisational change. Second, managers may be as subject to an ethic of enterprise as other members of the labour force, requiring different positionings of their subjectivities and practices. Third, there is the question of the geographical locations of the ethics at play – geographically and organisationally. Local, regional, national and transnational organisations may manifest different, contradictory, ambivalent and complex ethics in relation to the conduct of conduct. The ethics of enterprise may be powerful but it is not all encompassing and indeed may be discursively 'worked' and re-worked in particular contexts (Farrell 2000). Indeed the conclusion of Keep and Rainbird suggests that a selective ethos of flexibility may be more significant than the calculating self posited by Rose.

Fournier and Grey (1999) offer another critique of the ethic of enterprise. In particular, they suggest that du Gay's argument says too much, too little and too often. Here they are suggesting that the notion of enterprise is more ambivalent than du Gay suggests. For instance, they argue that while enterprise has been a key aspect of organisational change, the practices associated with it are integrally linked with new bureaucratic forms rather than being in opposition to them.

TQM regimes typically instigate sets of procedures (and yes, teamworking and customer relations) which are fundamentally concerned with standardisation... Thus, on the one hand, delegation of budgetary control may offer the opportunity for autonomy in decision-making (and would therefore link well with enterprise) whilst, on the other, it establishes a framework of reporting and control which mitigates against enterprise. (Fournier and Grey 1999: 112)

There are complexities here between those who see enterprise and bureaucracy in opposition to each other and those who might argue that they exist in relation to each other, not only working but also worked. Does an ethic of enterprise involve a 'freedom' from control or a form of controlled de-control – a certain flexibility? Different ethical positions and possibilities are capable of being built upon such assumptions. Here, for instance, Fournier and Grey suggest that a professional ethic might draw upon the organisational/bureaucratic norms of the public sector to articulate norms other than those of enterprise to express some sense of the 'common good' beyond that expressed through an ethic of enterprise. Organisational change can therefore be directed to a range of goals and the conduct of conduct altered accordingly. The ethic has to be in relation to some wider goal that embraces more than oneself and the organisation, but also the community or polis as a whole. This can be seen as both oppositional to enterprise but also an attempt to inscribe different meanings into the ethic of enterprise:

professional discourses are deeply rooted in the fabric of some organisations (e.g. NHS, and the public sector general) and, far from being eroded by enterprise, some professions are (re)claiming moral ground by aligning themselves against the forces of the market and with the 'sovereign client' – thus seeking to rescue or colonise the notion of the customer from its enterprising meanings. (Fournier and Grey 1999: 118)

This is even as the ethic of enterprise has been deployed to dislodge what is constructed as the self-interested ethic of professional privilege.

It is clear from this discussion that the notion of an ethic of enterprise governing organisational change is oversimplistic. Both alternative ethical positions and positionings are in play and the ethic of enterprise is subject to many workings. 'There are different ways of experiencing and articulating the enterprise culture on different levels and in different arenas' (Cohen and Musson 2000: 32), a point that, to be fair, du Gay (1996 and 2000) actually makes himself. Insofar as this is the case, the significance of flexibility itself becomes subject to many workings, possibilities and constraints and, with that, the inter-relationship between flexible learning and organisational change. It may well be that an ethos of flexibility – and the many forms that takes – might have much to offer in examining the processes of organisational change at work in contemporary workplaces. However, there is no single ethical positioning but a range of situations and positionings that have to be evaluated as to their assumptions and effects in the micro-practices of conduct.

A working ending

The nature and extent of the processes outlined above need to be examined both in relation to the economy as a whole and also in relation to practices within specific workplaces. There is also the need to address the ambivalent consequences of such approaches – the extent to which they enable more creative forms of work and/or contribute to increased exploitation of the self in response to the insecurity engendered by such practices. In different organisations and different parts of the organisation the ethics at play may well signify different and contradictory things. New possibilities are opened up by the adoption of norms of enterprise and the possibilities for critical monitoring of the self and social. Here also the potential for enterprise to signify meanings other than those espoused in certain strands of narrowly conceived neo-liberal thinking needs to be considered. Active, creative, reflexive, risk-taking workers with certain degrees of autonomy in how they define and achieve their work goals, engaging in practices of perhaps social enterprise, would suggest a critical dimension to work which Taylorist principles deny. In some ways, a conception of a reflexive flexible worker can be used to contest the continuation of Taylorised and narrowly conceived bureaucratised forms of work. Inevitably, however, there are risks associated with such an enterprise. At play within these processes are a range of ethical positions. The conduct of conduct is always a space of contest and work.

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TRANSFORMING MANAGEMENT EDUCATION'S WORKING KNOWLEDGE: A POTENTIAL FRAMEWORK

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This paper challenges the view that it is only until relatively recently that higher education's focus has been forceably (via 'New Right' policies) turned to preparing students for professional working lives. By taking a longer historical view of systems of higher education we can see that universities, for at least the last 200 years have been preparing students for professional lives. In recognising this, the sometimes contested place of management education within universities can be viewed in a different light. If we can describe management education as the teaching of a set of disciplines to students engaged in, or intending to engage in, management as a career, then this description could equally apply to a number of more established professions¹. Over the last 10-15 years, the Critical Management Studies (CMS) field has positioned itself as running counter to 'traditional' management disciplines that "are generally understood to be devoted to the (scientific) improvement of managerial practice and the functioning of organizations" (Alvesson & Wilmott, 1992: 1). Hence, the tensions within management education between those who label themselves 'critical' and other non-critical educators² centres upon questions concerning the nature of the knowledge within management education. However, as Reynolds (1999) has discussed there have been fewer concerns regarding the processes that might be used within critical management education. The conjunction of CMS's focus on content and not on process, alongside an appreciation of management education's socio-ideological position within higher education, constitutes the exploratory basis of this paper. This is concerned to problematise management education's *working* knowledge. I suggest that Gramsci's writings, particularly those on the formation and role of intellectuals within society, can be used as a way to reconceptualise both the nature of management knowledge through the role played by educators in this knowledge's creation and dissemination. Gramsci's concept of ideological hegemony has affinities with Bakhtin's thoughts on the appropriation by authors of the 'common view' of language within literary texts, and so I will also turn to a number of tropes within Bakhtin's work as a means to view the micro-practices of knowledge creation and dissemination.

The paper will be organised in the following way. First, I will present a view of higher education's historical development that places management education within universities in a less contradictory position than is commonly believed, particularly over the debates concerning the *relationship* between theory and practice. From there, I will begin to discuss how this insight might force us to reconceptualise the constitution of management education's knowledge through the lens of Gramsci's writings on intellectuals. In order for that lens to gain more precision I will then turn to some tropes contained within Bakhtin's essay *Discourse in the Novel* (1981), encompassed within his concept of dialogism, to analyse the creation of meaning within management education. This analysis will be specifically based on earlier discussions about the relationship of higher education to the 'professions' and its particular socio-ideological location.

The development of higher education

The work of Joseph Ben-David provides an historical perspective of the developments within systems of higher education in Germany, England, France the US and the former Soviet Union. Attention to the foundations of contemporary higher education, which Ben-David's work describes, is valuable on a number of levels. It forces a reappraisal of nostalgic conceptions of what constitutes higher education's function within society, thereby placing the various disciplines that comprise management education in a long line of disciplinary innovations arising from the needs and specificities of the contemporary socio-historical realm. Ben-David's work therefore is at once both useful in providing a macro perspective on higher education, as well as offering, through his investigations into the sociology of knowledge, micro level analyses of the development and growth of various intellectual (predominantly those in the natural sciences) disciplines. From the perspective of a conference concerned with 'working knowledge', Ben-David's historical analysis serves to disabuse us from perceptions of disciplinary essentialization; that is, notions that the disciplinary areas we operate within have developed from unique processes that will never be reproduced at a socio-ideological and historical level. Of course, the very existence of different fields of intellectual enquiry presupposes some unique coalition of circumstances leading to their creation and development. However,

¹ For Ben-David a profession denotes "all the occupations into which entry is generally limited to those possessing diplomas from institutions of higher education" (Ben-David, 1977: 30)

² Sympathetic as I am to the broad aims of CMS, there has been a tendency (highlighted by Gosling 1999, and Kaghan 1999 amongst others) to demonise 'non-critical' management educators.

what Ben-David does³, and why I am focussing on his work in particular here, is that through its analyses of the development of higher education, alongside investigations into the growth of specific disciplines we are able to witness the dialogic relationships between the public (i.e., the world beyond the university) and the private (the world of the university and the individuals within it), that are necessary to knowledge creation. In terms of higher education today briefly, specifically concerns around the increasing emphasis of knowledge as an asset, and as a source of competitive advantage within free-market economies, Ben-David shows us that knowledge has never been an epistemologically privileged sphere (Thrift, 1999). We can ground this notion further within management education. The Critical Management Studies (CMS) field, for example, was precipitated by concerns about the content of management education programmes. CMS views traditional management knowledge as devoted to the (scientific) improvement of managerial practice and the functioning of organizations, and not questioning of the perceived moral neutrality of management as an activity (Alvesson & Wilmott, 1992). It is the nature of the knowledge that is created and disseminated by management educators that is the concern here. From a CMS perspective we might ask whose purposes is such scientific knowledge serving, and how does it relate to the broader socio-ideological realm. But if we look back to the reforms in higher education in the 19th century as described by Ben-David, we can see that these are not new concerns. These reforms can, in many ways, be seen as arising from struggles between Gramscian traditional and organic intellectuals. Briefly, the reforms arose due to dissatisfaction with the classical education given by universities in the modern, scientific world, and consequently did not serve the needs of the 19th century 'growth' disciplines, such as medicine and engineering. So what were these reforms and who were the reformers?

19th Century higher education reforms

Ben-David's concern is to look at the emergence and development of the structures of systems of higher education in Germany, France, England, the US and the former Soviet Union. Current systems of higher education within these countries have their roots within the reforms that began in Germany during the 19th century. Prior to this, higher education's purpose (including the education of professionals) "was not to train students for a variety of specialities but to transmit the intellectual heritage. ...There was no assumption, however, that one could apply theoretical learning directly to technical problems, except to some extent in law" (Ben-David, 1991: 10-11). The present system, by contrast, is characterised by its specialisations particularly at the higher degree level. The French *Grandes Ecoles*, and US Graduate Schools are institutions directly arising from the 19th century reforms, as is the organisation of higher education set up in the Soviet Union. Another innovation of the 19th century reforms was the "openness of the traditions cultivated at universities" (ibid: 11). According to Ben-David, it was only in the 19th and 20th centuries "in the course of programmatically pursued research at universities" (ibid: 12) that the idea came that universities transform disciplines or split them into specialities.

Ben-David describes the initiators of the reforms in Germany, France and England as philosophers, scholars and administrators. In England, administrators were less important, rather it was "an ill-defined group of professional people, some businessmen, and public figures (who) played a role in the movement" (ibid: 12). Accordingly, at this time we witness higher education's role developing into an educator of future professionals. Strong beliefs in the applicability of science, and the selection of an administrative elite "through an education that conferred specific technical qualification in fields relevant to their work seemed to be more equitable than selecting them according to university degrees testifying to some general learning of doubtful relevance to the task" (ibid). Also interested in the reforms were "low-grade professionals, such as technologists, apothecaries, pharmacists (who) envied the privileges of the old learned professions" (ibid: 13), which provides further illustration of professional groups' seeking recognition of increased status through a university education. Present-day managers seeking an MBA qualification would therefore not appear to be such new birds after all.

The form these reforms took in England was the establishment of new universities to compete with the ancient universities, as well as professional training and licensing schemes. This contrasted to the situation in post-revolutionary France where universities were abolished in 1793, and a new system arose that contained schools for the professional training of teachers, doctors and engineers. Whereas in England there was cooperation between universities and professional associations only notionally supervised by government, in France its organization was distinguished by "its complete subjection to the central government" (ibid: 16). Critics and supporters of the nature of higher education expansion in England today often point to similarities with the US system, so it is perhaps instructive to look at the foundations of this system to pinpoint possible future tendencies. The US system prior to the reforms was similar to European systems in that it shared an

³ It is important to point out that Ben-David is not alone in investigating either the development of universities, nor the sociology of knowledge(s). Other examples, include Whitley (1988, 2000); Smith (1999); Bourdieu (1981); Parsons (1977), to name but a few.

almost exclusive emphasis on classical learning. However, in the scientific field, the purpose of the reforms was to catch up with European countries, as there was a lack of sufficiently competent scientists. In the US, and this links directly to the contemporary situation in England, there was a demand to extend opportunities for higher education to all levels of society, not simply to those who wished to enter the professions. This led to a two-tier system of general higher education in which students could be prepared for entry into advanced studies. Institutions offering possibilities of advanced study included the Graduate Schools, where students studied for doctoral degrees. And it is the Graduate Schools in the US today who provide education opportunities for current or future managers.

I began the paper by suggesting that the location of management education within universities has been a contested one. Debates within the CMS field reflect the contested nature of the management education curriculum, and attempts to 'professionalise' management through the establishment of a set of nationally recognised management competencies have met fierce resistance from educators and managers alike. If an assumption informing the desirability to characterise management knowledge through a set of competencies is the notion that theory does lead directly to practice, then this signals a departure from the links between professional education, as instituted through the 19th century reforms, and the professions. It additionally supports the CMS challenge to the traditional received wisdom of management knowledge and its assumed value neutrality. Ben-David's broad definition of profession mentioned earlier is deliberate, and the reason for this becomes clear when reading his thoughts on the links between professional education and the professions themselves. In a sense these constitute reflections on the link between theory and practice, and according to Ben-David there is a "scale of relationships between specialized knowledge and practice" (ibid: 31). His thoughts on the relationship between knowledge and practice, which are based on observations of professions as diverse as social work and engineering, offer fruitful and potentially liberatory insights when considering what constitutes and characterises management knowledge today. They add grist to the mill of those in the CMS field in that they suggest that there are limits to the instrumentality of what passes as theoretical knowledge. He states:

In fact, in very few professions is practice directly *based* on some kind of theoretical or other specialized disciplinary knowledge and practice. There is rather a scale of relationships between specialized knowledge and practice. Exceptions are teaching and research, chemistry, some fields of engineering and medicine. But in most kinds of engineering and medicine, though practice may require frequent recourse to specialized knowledge, the use of this knowledge is intuitive and guided by experience. Finally, in such professions as social work there is also recourse to specialized knowledge, but the range of potentially relevant knowledge is so wide that it is impossible to delimit it to a relatively coherent field. (ibid: 31)

He later continues: "The privileges of professional status and its requirements of higher education arose not so much from the difficulty and the specificity of the professional function, but from anxiety about the potentially far-reaching consequences of professional work" (ibid: 32). It is interesting to reflect here that it is the consequences of management as a practice that partly drives the CMS agenda; that is, unquestioned values that underpin much management knowledge and practice.

The 19th century reforms and implications for management education

If we are prepared to follow Ben-David's view that specialised knowledge acquired in institutions of higher education is limited in terms of practical application, and that experience plays an important role in the execution of all professional work, we are inevitably forced to ask whether these features are acknowledged in the education of managers. This forces a number of questions, predominantly: what are the characteristics of knowledge within management education; and how is it disseminated, particularly within the classroom? The major defining characteristic of the CMS field centres upon addressing the first question, whilst the second as Reynolds (1999) has discussed, has received less attention.

Ben-David's historical analysis of the development of higher education provides contextualization for its contemporary role. Particularly noteworthy are both the impetus that lay behind the reforms, which was to provide education for the professions, as well as who the reformers actually were. In terms of management education, we can observe that in one sense it is simply an example of a profession that now has a constituency large enough, and deemed sufficiently important enough, to merit links with higher education. The reasons for both the size of the constituency and its relative importance require a degree of attention that cannot be contained within this paper, but in terms of today's so called knowledge economy where knowledge is said to constitute a competitive advantage, connections to the western free-market economy are allusive. Just as in the 19th century medicine and engineering offer examples of professions demanding that higher education provide an education that was more relevant to their professional work (in an era which believed strongly in the applicability of science), so we have increasingly seen in the latter half of the 20th

century an increase in management education provision. Whilst the growth of educational provision for medicine and engineering in the 19th century would appear to rest on a set of socio-economic circumstances different in essence to those directing the growth of management education, nevertheless we can see that the prevailing socio-ideological framework is definitive.

It is instructive to look at the growth of scientific knowledge in the 19th century in order to gain a clearer perspective on the potential insights offered by Bakhtin on the characteristics of management education's knowledge, and how this is inherently linked to the relationship between educators and practitioners viewed through a Gramscian lens. By doing so I hope to demonstrate that stimuli for disciplinary growth in many ways have not altered measurably. This stands in contrast to views which see the creation of knowledge in the so called global era as constitutively different; where knowledge "has ceased to be something standing *outside* (my emphasis) society, a goal to be pursued by a community of scholars dedicated to the truth but is shaped by many social actors under the conditions of the essential contestability of truth" (Delanty, 1998: 6). In short, my argument is that assumptions made in the late 20th century regarding "how things were" require careful attention, and by dispelling potential myths about how knowledge was/is created we might be in a better position to see through the dogma and rhetoric of those with potentially harmful vested interests. In the case of management education, maintaining total adherence to the view that we all play a role in shaping the truth risks disguising continuing asymmetries of power. Just because the teaboy is now 'empowered' to choose the brand of coffee served at the Board of Directors' meeting, does not mean he will be able to design the new layout for the staff canteen. "Nothing else but institutions can define sameness" according to Mary Douglas (1987: 55); and it is these institutions that need to be agreed upon before discourse can take place. The danger is that in being seduced by over-inflated rhetorics claiming that "we are all (equal) knowledge producers now" we fail to appreciate that what we are witnessing now actually constitutes subtler changes than we might imagine, a true appreciation of which can only be gained by being attentive to the dialogues taking place within knowledge creation. This accepted we, and the era in which we live, is not as unique as we might like to think. Returning to management education once again, its development as a discipline in many ways is not too different from the development of organic physics. What is unique about it, and this is where Bakhtin can help us, is that the contributing voices - the heteroglossia - are situated in a particular chronotope, a unique temporal-spatial constellation.

Some 19th century growth disciplines

Ben-David's research into the growth of chemistry, physiology and physics in mid-nineteenth century Germany is instructive as it sought answers to questions which we can equally ask of management education. He asked why there was an increase in the number of people taking up experimental research (in chemistry, physiology and later physics) as a vocation. A form of research which had met explicit prejudice against the dominant idealistic and romantic views of science. The answers to these questions are surprising in that the explanations invoke the concept of an academic market across Länder boundaries. There were a relatively large number of universities (around 24) within a decentralized higher education system in which universities in the different Länder competed with each other for academic fame. To emphasise that the academic transfer market is not such a new thing, this competition created a sellers' market, according to Ben-David.

The opportunities (in the sellers' market) were particularly favourable in the experimental sciences, in which success was judged by relatively objective standards, academic recognition was worldwide, and the opportunity to start a new speciality - and thus to realize the dream of every competitor in a market for obtaining at least a temporary monopoly - was greater in the humanities. These conditions attracted talented people and gave them the bargaining power needed to obtain new academic positions and good laboratories and to overcome the prejudice against experimental fields. (Ben-David, 1991: 504)

I quote Ben-David at length here as it is not too far-fetched to substitute 'new academic positions' with 'corporate sponsored Chairs', and 'good laboratories' with 'Graduate School buildings', thereby enabling insights into the contextual influences on disciplinary, and hence knowledge, creation. That is, they are essentially based on interactions; uninterrupted flows of dialogues operating at a number of levels of language. It also removes us from nostalgic concepts of the university as a place in which "academics exercised their freedom to think and teach as they wished - free from the interventions of the state and the capitalist or the mundanity of the nine to five", a place in which students were "taken away from the domestic home to live in an enclosed community of scholars with its own rules for work, leisure, language and community", a place in which "both the state and the capitalist supplied grants and bequests that would allow these spaces and times to continue being protected" (Parker & Jary, 1995: 331-332). Following Parker & Jary, I agree that the spatial and temporal boundedness has been declining since Robbins' 1963 report, but that given the evidence offered by Ben-David we can see that this boundedness has not been, at least since the 19th century, as impenetrable as we might think. Rather, it is a question of degrees. What we are

witnessing today is then a process of amplification of trends begun by 19th century reformers concerned to make higher education more relevant to the professions. Trends whose shape and growth is less problematic to predict if we see the processes responsible for them as a series of dialogues.

It might therefore seem unlikely that we can draw parallels between the growth of organic physics with the growth of trends in management knowledge. However, an appreciation of the factors influential upon organic physics' growth supports Abrahamson's (1996) much later research on the growth of fashions in management knowledge. According to this research we can gauge trends in the management fashion (knowledge) setting process by assessing how they fit into contemporary national norms of both rationality and progress. The case of organic physics in Germany predates Abrahamson's work by approximately 150 years, but its intrinsic connectedness with the socio-ideological realm of that time is fascinating, and so I will discuss it at some length.

Ben-David refers to Lenoir (1982) who asked why a group of people sought to pursue organic physics (described as a "radical biophysical programme" (Ben-David, 1991: 505)). As described, this can be interpreted as a struggle between Gramscian organic (no pun intended) and traditional intellectuals. Partly, it seems, they were motivated to revolt against a particular professor - Johannes Muller - whose laboratory had the greatest reputation during the 1830's. They wished to establish themselves as a distinct group (a kind of "product differentiation", as Ben-David calls it), but perhaps more surprising is that their motivation came from their participation in a scientific-political movement in Berlin, headed by Gustav Magnus - an experimental physicist - and hence one who was operating outside the predominant idealist and romantic views of science. For him, the prejudice against experimental physics was "part of the same system of aristocratic prejudice and absolutist authoritarianism which also discriminated against the "working bourgeoisie" and kept Germany discriminated into a number of small states" (ibid: 506). To develop and teach physics was consequently for him "a mission of spreading enlightenment and knowledge useful for economic growth" (ibid). Magnus was joined by other organic physicists, junior officers from the army engineering corps and inventors in the Berlin Physical Association established in 1845. This was partly done in order to develop their professional careers, but also because they shared prevailing liberal views on political, economic and academic reform. Thus, Ben-David states, "organic physics was not simply an endeavour to advance physiological knowledge but was also part of a world view, related to sociopolitical ideology" (ibid).

The utilitarian approach to knowledge of Magnus and his followers is ostensibly not completely divorced from present day mantras proclaiming knowledge as constituting a form of competitive advantage. Some authors see this as a consequence of the turn away from political-economy (Ray and Sayer, 1999) to a cultural turn within capitalism (Thrift, 1999). But leaving aside the contextual chronotope of today's knowledge, in terms of the micro-processes of knowledge creation similar principles apply. That is, there exists a dialogic relationship between the public (the world beyond the university) and the private (the world of the university and the individuals within it). A more specific recognition and acknowledgement of this within management education, particularly generalist programmes such as the MBA, could potentially act as a spur to a reinvigoration of what passes as knowledge. CMS has been challenging the view that management, and management education, are morally neutral activities. But for this to carry any real reformatory potential it is not just the message imparted by the content that requires critique, but also the processes which lead to the creation of that content, thus helping us to be wary of seductive claims about the "end of knowledge" (Delanty, 1998). We therefore need to look, as Reynolds (1999) suggests, at the learning milieu and the micro-processes therein, as much as we do at the content. And in order to do that, we require some analytic tools that assist in reconceptualising knowledge creation.

Steps towards reconceptualising management knowledge

The end of knowledge thesis presupposes that for knowledge to exist, there needs to be a universal truth - a somewhat Utopian view of knowledge. However, this clearly is just one view of knowledge, and as the example of the 19th century organic physicists demonstrates, the idea of contested knowledges is not a new phenomenon. It is doubtful that knowledge was "something standing outside society; a goal to be pursued by a community of scholars dedicated to the truth" (Delanty, 1995:6); a statement suggestive of a nostalgia towards a perceived previous order. In order for us to begin to attain the possibility of contesting the current received wisdom of management knowledge, I suggest we need a more constructive conceptualisation around meaning creation; one which acknowledges that agency and structure are not mutually exclusive entities. This requires both a macro-level analysis of the characteristics of current public/private relationships, that is those between management educators and practitioners; and attention to the micro-level processes inherent to the formation of these characteristics.

Earlier I alluded to Gramsci's thoughts on the role of intellectuals in society as a means to conceptualise the nature of the struggles taking place during the 19th century reforms of higher education. For Gramsci, the organic intellectuals would be representative agents of the working class who would challenge the ideological hegemony of the prevailing ruling order. In this sense they would be men (sic) of action, engaging in "active participation in practical life, as constructor, organiser, permanent persuader and not just as simple orator" (Gramsci, 1971: 10). They play the role of mediators and provide "the vital linkage in Gramsci's theory between the intellectual sphere (where Marxism had originated) and popular consciousness" (Boggs, 1976: 78). Whilst not essentially members of what is commonly thought of as the working class, many of the 19th century reformers nevertheless had professional roots linked to the post-Enlightenment industrialisation of society; the "low-grade" professionals as Ben-David calls them with their belief in the applicability of science. Their professional status notwithstanding, they challenged the traditional intellectuals of the time who clung to a classical, pre-Enlightenment, form of education. So, rather than fit the reformers and non-reformers directly within Gramsci's categories of intellectuals (categories he wrote of within a specific socio-historical era), it is more productive in an analytic sense to look at the way he carries out his analysis of intellectuals' roles. According to Holub (1992) his is a linguistically oriented theory of the subject. This, alongside his view that in order to challenge hegemonic processes we must view all individuals as intellectuals, as engaged in communicative processes, and therefore engaged in critical thought, is akin to the Bakhtinian concept of dialogism. As such, it acknowledges that communication can only function when at least two people interact with one another, thereby creating meaning. Activity, including knowledge creation, is therefore the manifestation of a relationship in a particular form. We can therefore see the relationship between management educators and practitioners, through the dialogues that take place within that relationship, as creating knowledge. However, what I am arguing and what other research has implicitly shown (e.g. King, 1995; Watson, 1996; Thomas and Anthony, 1996), is that the educator/practitioner relationship is only rarely perceived as a dialogical one. Hence the need to pay heed to processes of education, as much as content. In a pragmatic sense, by explicitly conceptualising management education's knowledge as the consequence of a dialogical process in which "(E)ach word tastes of the context and contexts in which it has lived its socially charged life" (Bakhtin, 1981: 293), creates possibilities to broaden the content of management education programmes such that it operates beyond perceived instrumental applications.

Concluding thoughts on a potential framework

By attention to both the processes constituting the development of higher education over the past 200 years, including the particular socio-ideological realm(s) in which this development has occurred, alongside the concomitant growth of certain intellectual disciplines, the benefits of an analytical framework operating simultaneously at the macro and micro levels can be discerned. Gramsci's writings on the development and role of the intellectual within society provide a way to view the characteristics of the different groups engaged in reforming higher education. On the one hand, we have the traditional intellectuals who adhered to pre-Enlightenment traditions of higher education where knowledge was under the ownership of a select group of relatively cloistered academics, and on the other we have the organic intellectuals who envied the privileges of the old professional élites, and who wished to make higher education more relevant to their professional needs. This macro view is essentially one of a relationship in which, through processes of communication between active subjects, new meaning is created. This accords with Vacca's reading of Gramsci's elaboration on the role to be played by the organic intellectuals, which suggests that conditions for a new 'social organization of knowledge' from below need to be created. "It is a question of the critical re-elaboration for the intellectual activity that exists in everybody at a certain degree of development and which also exists on the basis of productive experience, so that it may constitute the foundation of a new and integral conception of the world" (Vacca, 1982: 64).

To counter the view that what we are now witnessing is the 'end of knowledge' (which, following Delanty, presupposes that there was once an essential truth), and to conceptualise it more as a continuation and amplification of processes, we need to use a more precise lens that gives greater definition. Viewing all acts of knowledge creation as arising from dialogical relationships requires sensitivity, in this Bakhtinian conception, to the heteroglossic aspect of language (its social diversity expressed through many languages), and of each individual word.

The word in language is half someone else's. It becomes 'one's own' only when the speaker populates it with his own intention, his own accent, when he appropriates the word, adapting it to his own semantic and expressive intention. Prior to this moment of appropriation, the word does not exist in a neutral and impersonal language (it is not, after all, out of a dictionary that the speaker gets his words!), but rather it aspects in other people's mouths, in other people's

contexts, serving other people's intentions: it is from there that one must take the word, and make it one's own (Bakhtin, 1981: 294).

This is a more creative view of knowledge that recognises the role of individual agents, and through language sees them as both inherently linked to the past, and also to the future. It is in perceiving language, and hence knowledge, creation in such a light that I am arguing offers liberatory possibilities for management education's *working* knowledge. The characteristics of such a knowledge would need to be mindful of the socio-ideological realm in which current knowledge is being created, and its intrinsic connectedness to past socio-ideological realms. It therefore requires a conceptualisation of knowledge that operates beyond its supposed instrumental-technical applicability to notions of practice, which itself, of course, has its own socio-ideological "debris of meaning from the past" (Smith, 1998: 64).

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NEGOTIATING KNOWLEDGE IN THE KNOWLEDGE ECONOMY: WORKPLACE EDUCATORS AND THE POLITICS OF CODIFICATION

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Introduction

In this paper I'm pursuing an interest in the way that local and global discourses are mediated in specific workplaces to produce work practices that 'count' as knowledge at a particular time and place (Farrell 1999; Farrell 2000; Farrell in press 2001). Specifically, I'm interested in the ways in which, and the extent to which, work practices that constitute knowledge and skill at the local level are policed and legitimated at the global level; I am interested in the ways in which knowledge is negotiated.

I introduce this discussion with the transcript of a fragment of a conversation in an Action Learning Team meeting. Sally and Margaret are Enterprise Based Teachers, Bill is a Warring Shed Supervisor and Baz is a Production Supervisor. Matt is the Systems Manager.

- Sally *What you're saying has just prompted me to note down, just sort of to think about, is, um, what is the prime purpose of these Eight step teams? Now, I've interpreted it, and that maybe partly influencing what's happening in Harbourside as well, I've interpreted it very much um that the team aspect of it. Now, if you interpret it as: 'Let's get something fixed here' you may be perfectly right, it may be [the] most efficient way to do that may be to have you [individually] documenting what you do and you'll come up with a solution.*
- Matt *yeah*
- Sally *Now, um, I think both, both things are*
- Baz *You get both sides, I think. Some plans you might have three or or five people on the team sort of thing, but in other cases, like this case, Bill's the best person, IS the team*
- Sally *Yeah but if*
- Baz *or, if he wants me on there, if he wants me, but*
- Sally *But if there was a team around, um, Bill*
- Bill *No. It makes it too complicated because they always come up with silly little things*
- Sally *But*
- Bill *Then, then you discuss, all that, and really you're going backwards*
- Sally *Yeah*
- Bill *So to me it's a waste of the time we took. They tried this before*
- Matt *um Bill*
- Sally *yeah*
- Bill *and that's why it doesn't go far*
- Baz *in Bill's case I don't think the people have got the experience to do those sort of things*
- Sally *What I'm wondering, though, is would they learn from Bill by being involved in a team with Bill and seeing the way he goes about it? If there'd be some spin off in terms of the*
- Bill *Not if you know, not if you know the people I work with. They don't listen.*
- Baz *They don't listen*
- Sally *Which I don't [know the people you work with]*
- Bill *They don't listen, they like to go their own way.*
- Margaret *I think it'd be useful though Bill to try involving them in a team, just to see what sort of experience they get out of it. What does actually happen*
- Bill *But then I think you put the project back*
- Sally *But then we come back to what is the project? Is it to get people here working in teams or*
- Bill *no it*
- Sally *is it to solve problems?*
- Bill *Well, really, it's to solve problems. Make it a better working place for the people, for the people that's here.*
- Sally *yeah*

Bill I mean they can't do it themselves so really it's up to me to explain it to Margaret or whoever
Sally yeah
Bill What the costing is, which they don't know
Margaret that was pretty much
Bill and how to work it out
Margaret I think that was the focus too
Sally yeah
Margaret when um it was launched by Pat and Jim. That we were looking um at what problems can be solved
Sally yeah
Bill mm
Matt Whereas in reality it's more of a as much a team building exercise as it is as a dollar saving exercise or an improvement exercise
Sally It's an interest, it really makes an interesting contrast to see the way both are going and I'm not sure that that this um question has actually formed in the minds of the people who set this all going, that that we would be getting this dual focus.

My focus in this paper is on the role workplace educators like Sally and Margaret play in the negotiation of working knowledge at a local site like Australian Fabric Manufacturers (AFM¹), and why their interventions make a difference to Bill and Baz and Matt and the others who work at AFM. More particularly, I think about this exchange as a negotiation about 'what counts' as working knowledge at AFM, and how it comes to count. Sally and Margaret play a critical part in this negotiation and I am especially interested in how this has come about when it would seem that they have very little direct knowledge or obvious authority on the factory floor or in the larger organisation.

My argument is that, if we view working knowledge as 'textually mediated social action', as Dorothy Smith (1999) does, and if we acknowledge the role of what Fairclough (1996) calls 'discourse technologists' in policing and legitimising global textual practice in local workplaces, and if we examine the role of workplace educators in textually mediating particular social actions, then we can come to a better understanding of the role that workplace educators play in negotiating what counts as knowledge at particular moments in particular places.

I begin by talking a little about Smith's view of text and, particularly, the role of the material text in regulating local social action. I move then to a discussion of the role of Fairclough's 'discourse technologists' in regulating social action across local and the global fields of exchange, like the operation of Autoco² and other trans-national companies. Finally, I consider the Action Learning Team meeting as a pedagogic space in the workplace, a space marked by what Bakhtin (1981) calls dialogic heteroglossia. I think about the pedagogic relations invoked in the Action Team meeting as relations that 'work discourses' to produce knowledge, but which also 'work discourses' in an attempt to police discursive practice and legitimate certain social practices as real knowledge while de-legitimising others (Farrell 2000, in press 2001). Throughout this discussion I will return to Bill and Baz and Matt and Sally and Margaret as they 'work' the discourses available to them to negotiate what counts as 'knowledge', and who can 'know', for the moment, at AFM.

Knowledge

It doesn't seem necessary, in this company, to rehearse the arguments presented by Castells (1996) and others about the role of knowledge in our own and other ages. It is enough to say that knowledge is, and always has been, critical in the maintenance and growth of individual organisations, and local and global economies, and that the contemporary global economy places distinctive demands on knowledge production at local and global sites. As Davenport and Prusak argue:

Without knowledge an organisation would not be able to organise itself; it would be unable to maintain itself as a functioning enterprise. ((Davenport and Prusak 1998): 52)

There are, of course, lots of ways to talk about knowledge. In this paper I will concentrate on Smith's because I find it particularly useful, partly because of its focus on text and partly because it picks up the

¹ AFM is an Australia-based automotive fabric manufacturing company established on three sites, two metropolitan and one at Harbourside, a major provincial town.

² Autoco is a global automotive manufacturing company and a major client of AFM. Names of companies, people and places have been changed.

pragmatic issue that Davenport and Prusak identify, that knowledge is the basis of organisation, and of organisations.

Knowledge as textually mediated social action

Smith argues that knowledge is social. It:

is not the product of a solitary Cartesian consciousness, nor is it contained in a discursive field. Sense, meaning, truth – and falsehood – are always local achievements of people whose co-ordinated and co-ordinating abilities bring about the connectedness of statements about the word and the world they index during that time, in that place and among those who participate in the social act, whether present to one another or not (Smith 1999: 126-127).

What attracts me to Smith's view is, firstly, that knowledge is not only a social act but that it is *textually mediated* social action. She conceives of textually mediated discourses (she calls them T-discourses):

as skeins of social relations, mediated and organised textually, connecting and co-ordinating the activities of actual individuals whose local historical sites of reading/hearing/viewing may be geographically and temporally dispersed and institutionally various.' (Smith 1999:149)

The work of the text, then, is to organise people and practices so that certain kinds of preferred social relationships are established and maintained despite the fact that participants live many thousands of kilometres apart (in Melbourne and Manila and Ohio for instance) and operate in a wide variety of institutional settings (a 'Head Office' with tens of thousands of employees, an 'old economy' manufacturing company with 600 employees etc). Another way of saying this is that the text shapes who we can be and what we can do regardless of where we live and work.

Smith doesn't regard the textual mediation of knowledge as a new phenomenon, she views it as a persistent feature of what she calls 'ruling relations'. The ruling relations are:

text mediated and text based systems of 'communication', 'knowledge', 'judgement' and 'will' (:77)

However,

While the ruling relations are an organisation of power it is misleading to reduce them to relations of domination or hegemony, or to view them as monolithic or manipulated. I emphasise again, the ruling relations form a complex field of co-ordinated activities, based in technologies of print and increasingly in computer technologies. (Smith 1999: 79)

One of the ways in which texts co-ordinate ruling relations is through the reification of things like 'culture' or 'language' or 'knowledge', making it seem that they exist outside people's lives. Material texts are a critical means of connecting the local with the global and, particularly, of inserting global ruling relations into local sites:

The material text creates a join between the local and the particular, and the generalising and generalised organisation of the ruling relations. It is the materiality of the text itself that connects the local setting at the moment of reading into the non-local relation that it bears. (Smith 1999: 79)

It may be obvious by now that when Smith talks about 'text' she means the material text – the book, the pamphlet, the memo, the letter, or, in the case of AFM, the Autoco Quality Manual and the Eight Step Problem Solving Plan (I have attached a brief outline of the eight steps in Appendix A). While I generally tend to take a broader view of text than this I find it helpful to be reminded that important texts very often do take a material form in the contemporary workplace, and that the materiality of the text is significant in establishing and sustaining routine relationships between the local and the global. The critical attribute of printed or electronic texts is their 'generally neglected quality of indefinite replicability', a quality that works to standardise social action. Global companies rely on this quality of replicability when they use texts like Quality Manuals and other standardisation frameworks to co-ordinate activities across space and time, attempting to impose their own meanings at remote local sites.

If I think about knowledge as textually mediated social action, and if I think about texts as material texts that work to mediate what counts as 'knowledge' in local settings like AFM, then I understand better the power of global texts like the Autoco Quality Manual and the potential power of the Eight Step Problem Solving Plans³ that Sally and Margaret are struggling to produce at AFM. These texts work to standardise what counts as knowledge at local sites and so to control the work practices and working relations of the people employed. However, as Smith acknowledges, AFM is not a blank page waiting to be inscribed with global knowledge. AFM is a relatively successful organisation and knowledge is the basis on which an organisation organises itself. There are competing conceptualisations of knowledge production at AFM and these are deeply embedded in local practices and organisation frameworks. A critical question for me is, therefore, how texts like the Auto Quality Manual are animated in organisations and come to displace, or at least challenge, persistent discourses around knowledge production.

'Problem solving' as knowledge production

The document reproduced below is a page from the Autoco Quality Manual. It interests me because it reifies 'problem solving', seeking to present it as a set of intellectual and interpersonal practices that can be abstracted from local sites and conditions and be operationalised at any site with any participant. There is no reason to suppose that this set of practices would be adopted at AFM if it were not for the fact that problem solving work practices at AFM must be scored according to the Autoco Quality Manual Rating Procedure if AFM is to retain supplier status with Autoco.

Rating Procedure

4. *Is there effective use of structured problem solving (eg. 8D)? Are root causes determined and verified?*

RATING

- | | |
|---------------------------------|--|
| 0.No problem solving | There is no evidence of structured problems solving |
| 1.Only for the customer | Structured problems solving is used, but only at the request of the customer |
| 2.For internal issues | Structured problem solving is used for internal problems such as those identified in [the manual] as well as for external problems |
| 3.Use of teams and tools | Structured problem solving employs team participation and all of the basic problems solving tools are consistently used. Full cross functional teams, is/is not analysis, fish bones flow charts, and prioritisation tools are effectively used |
| 4.Analysis system | Structured problem solving analyses are supported with data and dates for problems occurrence, containment, root cause identification and verification, permanent corrective action implementation and preventative action implementation. The structured problem solving tools utilized includes a detailed verification plan which closes the loop on root cause resolution. |
| 5. Advanced statistical methods | As per 4. and advanced statistical methods such as D.O. E.s are regularly used in team problems solving. |

The text comes from the Autoco Quality Manual, a manual produced at a local historical site (the Engineering Department of the head office of Autoco in the USA) and designed to ensure that 'best practice' in problem solving is observed, not only in all the departments of Autoco, both local and remote, but also in supplier companies like AFM. One of the problems faced by Autoco and companies like it is that, in outsourcing the production of critical components, the company risks ceding control of the final product to loosely affiliated remote organisations. The Quality Manual is an attempt to retain control by controlling the processes and relationships of the supplier companies by reifying certain locally situated practices as 'best practice' in, for instance, problem solving. A curious feature of the manual, given its title, is its silence on the matter of 'Quality'. At no point does it specify what constitutes an appropriate standard (or 'quality') for the fabric that AFM produces. It is primarily concerned with the organisation of work practice, to co-ordinate people and knowledge generating activities at a local site. One of the features of the material text is

³ The Aim of the Action Learning Team facilitated by Sally is to produce an Eight Step Problem Solving Manual for workers at AFM, and part of the process of generating this document is to identify problems and develop Eight Step Problem Solving Plans according to a pro-forma (included here as appendix a)

its 'infinite replicability' and the Autoco Quality Manual certainly seems infinitely replicable, turning up in precisely the same format, thousands of kilometres from home and demanding that precisely the same set of social actions count as knowledge production at every site. The Quality Manual is a good example of a material text that, according to Smith, co-ordinates, orders, hooks up the activities of individuals in multiple local historical sites (:149).

Bill and Baz and Matt and Sally and Margaret are meeting together in the Action Learning Team Meeting to satisfy the demands for problem solving practices outlined in the rating procedure described above. They are adopting a team-based approach to problem solving, not because they are convinced of its effectiveness, (although Sally and Margaret might be, Bill and Baz are, from the transcript above, unconvinced), but because (as level 3 indicates) they are required to do so. They are using the 'structured problem solving tool' of the Eight Step Problem Solving Plan because they must do so in order to achieve an acceptable score and retain the custom of Autoco. As far as the Quality Manual is concerned, problems are only considered 'solved' if these processes and practices are enacted, and a material text is produced; other forms of problem solving do not register. From my perspective, problem solving constitutes knowledge production, and the Rating Procedure is an attempt to regulate what counts as knowledge at AFM by regulating the processes and relations by which knowledge is produced. The actions of Sally and Margaret and Bill and Baz and Matt sitting around the table at AFM arguing about the purpose of team meetings were put in motion by this document. The capacity of this documents, and others like it, to authorise action, and generate material texts like the eight step problem solving plans, rests on the conditions of its production as an *organisationally warranted accounts* of workplaces and work practices (Jackson 1996).

Knowledge as a local achievement

The second thing that attracts me to Smith's analysis of knowledge as textually mediated social action is her emphasis on knowledge as a *local* achievement. She stresses that, although there are concerted efforts to produce material texts which suggest that knowledge can be abstracted from local conditions of production, in fact it never is:

Knowledge, thus conceived, is always in time, always in action, among people, and always potentiates a world in common as, once again, known in common. This account of knowledge and telling the truth represents them . . . as dialogic sequences of action in which the co-ordinating of divergent consciousness is mediated by a world they can find in common. (Smith 199:127).

AFM is a local site and, while the Autoco Quality Manual is a material text which powerfully 'creates a join between the local and the particular, and the generalising and generalised organisation of the ruling relations' the local context is critical in permitting the creation, however temporary, of a 'world in common'. Bakhtin's notion of dialogism is helpful in understanding how this local, temporary 'world in common' might come about.

The word, directed towards its object, enters a dialogically agitated and tension-filled environment of alien words, value judgements and accents, weaves in and out of complex interrelationships, merges with some, recoils from others, intersects with yet a third group . . .

The living utterance, having taken meaning and shape at a particular historical moment in a socially specific environment, cannot fail to brush up against thousands of dialogic threads . . . it cannot fail to become an active participant in social dialogue'

(Bakhtin : 276)

So, while it certainly seems to be true that the material text, like the Autoco Quality Manual, is designed to fix meaning across time and space, Bakhtin argues that this can not be done, that words take up their meanings at local sites and local sites are heteroglossic.

The Action Learning Team was brought into being through the Autoco Quality Manual but it takes up the practices and values invoked in that material text, which does indeed attempt to reify certain social practices, in local and distinctive ways, ways that are negotiated in local team meetings like the one we have seen. The Autoco Quality Manual only comes to life when it is animated by Sally and Bill and the others in this local setting, and when it does come to life its words are inflected with local and competing meanings and values.

For instance, when Bill and Sally debate the purposes of the Eight Step Problem Solving Plan in the transcript above, I suggest that Bill and Baz are more focussed on the 'problem' while Sally is more focussed on the 'solving' and the 'plan'. In lines 1-8 Sally argues that they are equally concerned with

'getting something fixed' and 'the team aspect'. In line 9 Baz seems to agree, 'you get both sides I think' but he doesn't seem to mean that both aspects are equally important. Rather, he suggests that at different times in the work place problems will demand different strategies – sometimes a team of several people but in other cases 'Bill's the best person, IS the team' (line 10). Bill and Baz go on to collaboratively construct a model of knowledge production (or problem solving) based on 'experience' (line 22) to which other workers must first 'listen' (line 25, 26, 28) if they are to make a contribution. Bill sees his role as to solve problems and so 'make it a better place for the people who work here' (line 35) and to do that he must be the one who controls the knowledge, who 'explains' because 'they can't do it themselves'. It may be that, from Bills perspective, it is his knowledge-producing skills which distinguish him from the other workers.⁴ Sally and Margaret construct knowledge as something that is collaboratively produced in a team, and Problem Solving Teams are teams in which people learn how to solve problems. Teams are an end in themselves. Significantly, however, while Sally is prepared to contemplate a team of one, all knowledge must be documented, 'The most efficient way to do that may be to have you [individually] documenting what you do and you'll come up with a solution' (lines 5-6).

Their choices for focus are not innocent. Bill has a good deal invested in 'problems' being the focus of attention. The identification and solving of problems is part and parcel of the work of a supervisor, it involves expertise, real 'on the ground' knowledge of how things work in practice and the pragmatic constraints within which problems must be solved. For Bill, working knowledge is local knowledge; it comes with experience and invests the 'knower' with status. If Bill is the person who authorises what counts as a problem and what counts as a solution (at least on the factory floor) then he effectively polices and legitimises knowledge. Sally's position at AFM depends on her expertise in learning processes. She moves from industry to industry, developing only a superficial knowledge of what goes on the factory floor. Her expertise lies in learning theory – the 'solving' rather than the identifying of problems, and in developing written 'plans' like the Eight Step Problem Solving Plan the Action Learning Team is charged with developing. Sally's position within AFM relies on the reification of process, taking process out of the local context.

Discourse technologists

It is helpful to think of Sally, and her colleague Margaret, as 'discourse technologists'. Fairclough (1996) argues that the global economy demands discourse technologists, people whose job it is to intervene in the textual practices of work at local sites in order to shift discursive practice to standardised global discourses. Discourse technologists are understood to have access to special kinds of knowledge, reified knowledge that comes from outside the organisation. Specifically, discourse technologists research the discursive practices of institutions, design discursive practices in line with institutional aims and strategies and train people in their use. In general terms, the function of the discourse technologist is to shift the control of local discursive practice from the local to the global. First, they shift the *policing* of discursive practice from the local to the trans-national level. This may be done, as it is at AFM, through the material text. It is Sally and Margaret's job to ensure that the demands of the Autoco Quality Manual regarding problem solving are met. The material text 'creates a join between the local and the particular and the generalising and generalised ruling relations'. The function of discourse technologists is to mediate local and global discourses at local sites in order to shift legitimacy to remote authorities.

In many respects, shifting policing is a relatively simple task because it involves the explicit exercise of authority. The more important part of the discourse technologists role is to shift legitimacy, and that is more difficult. Shifting legitimacy involves investing authority in a remote institution but it also involves obscuring the identity of the institution so that demands made by the institution are normalised, they seem transparently natural and right, just 'best practice'. This is evident what Sally calls on Bill to see himself as a teacher, sharing knowledge, not (by implication) as a person who, in giving away his knowledge, is relinquishing hard won power and authority in the workplace. If the discourse technologist is successful then the power of local participants (like the foreman or the head tradesman, like Bill) is reduced and the power of anonymous experts located outside the institution (for instance, international quality frameworks like QS9002), is increased. Experts outside the organisation not only police discourse practices (by, for instance, providing forms to report faults or protocols by which problems might be solved) but, through that process, shape 'what counts' as knowledge and who can say so.

⁴ I have discussed Bill's reluctance to relinquish the first person (and his identity as primary knower) and take up the agentless passive (giving up ownership of knowledge) in Farrell in press 2001.

Negotiating knowledge in pedagogic spaces

I want to suggest that the Autoco Quality Manual has unwittingly provided two new pedagogic spaces in which what counts as knowledge is negotiated at AFM. The first is the Action Learning Team meeting itself. The Action Learning Team meeting is a pedagogic space first because Sally and Margaret are expected to train other participants in the new discursive practices, and second because each member of the team is expected to become a 'learner', sharing knowledge and producing knowledge as problems are identified and resolved. However, the team members do not simply take up the discourse practices or the identities offered to them in the Quality Manual. The team meeting becomes a forum for debate and negotiation and, while the outcome is certainly constrained by the demands of the Quality Manual it is not determined by it. Team members 'work' the local and global discourses available to them to negotiate 'what counts' as knowledge production and Bill and Baz and Sally and Margaret and Matt negotiate 'knowledge' to include that produced by 'a team of one'. However, knowledge at AFM is no longer confined to that which is authorised by experts, and Bill must live with the threat that organisationally warranted knowledge may sometimes be produced by groups of people engaging in authorised 'problem solving' processes.

The second new pedagogic space is the Eight Step Problem Solving Manual produced by the Action Learning Team. The first line of the document states its purpose as to provide 'a structured way of bringing about improvement in the workplace'. The 22 page document outlines in detail the processes teams must go through in order to solve a problem. In doing so it meets the requirement of the Autoco Quality Manual that AFM must engage in structured problem solving. I'm thinking about this document as a pedagogic space partly because it was produced in order to induct workers at AFM into global discourses of knowledge production and partly because it is intended for use by other workers at AFM, inducting them in turn. It is an interesting document because the team members have themselves produced a 'material text' which joins the local and the global, a text which mediates social action at the local level with global discourses of knowledge production. The document is also a site for, and a record of, negotiation about what counts as knowledge at AFM. It explicitly states that, while a team will usually include several members, it is possible, and sometimes desirable, to have problem solving team of one. The eight steps of problem solving are also negotiable. While the document outlines the eight apparently generic steps in problem solving it also points out that sometimes there are many more steps (it describes examples which include step 3a, step 4c, etc) and suggests that some problems will require team members to return repeatedly to a particular step over the course of problem solving. It also suggests that some steps are not really to be taken seriously. The final 'Affirmation' step is regarded as 'too American' and omitted.

Workplace educators and the politics of codification

I have argued here that working knowledge is not fixed, it is always contested and negotiated. Increasingly, that negotiation involves the mediation of local and global discourses through material texts. Workplace educators play a critical role in these processes of mediation. As Fairclough argues, they are employed in workplaces to shift the policing of discursive practice from local to remote sites, often by enforcing the requirements of significant material texts. In ensuring that knowledge be codified according to the specific demands of global texts workplace educators are intervening in, and disrupting established systems of knowledge production, and power and authority, in local workplaces. It is not surprising that they encounter resistance. Workplace educators are also implicated in shifting legitimacy from the local to the global, and this also involves shifting local textual practices and disrupting local hierarchies of power and authority. Workplace education is, from this point of view, as profoundly political an act as other kinds of education.

Workplace educators are not, however, simply agents for trans-national companies. As Bakhtin reminds us, significant material texts like Quality Manuals are introduced into contexts already marked by vigorous inter-discursivity, struggle and negotiation. Workplace educators can open up the space for negotiation of what counts as knowledge, and who gets to 'know', in the contemporary workplace if they recognise the political nature of their work and the significant, although not unlimited, power they wield as they mediate local and global discourses.

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Appendix A

AFM Eight Steps to Improvement

1. **Pinpoint** – State the specific area targetted for improvement
2. **Process Definition** - How does the current process work? Flowchart if necessary.
3. **People Supports** – (a) Critical People who will be involved in the improvement
(b) Others in organisation who will need some improvement
© People who need feedback
4. **Measure** – Define how we will track progress
5. **Baseline** – Details of current performance
6. **Goals** – Based on benchmarks establish final and shaping goals
7. **Action Plan** – Define all steps and people responsible (What, by when, by whom, how)
8. **Feedback** – specify how feedback will be delivered

WORK KNOWING ON THE FLY: CO-EMERGENT EPISTEMOLOGIES IN POST-CORPORATE ENTERPRISE CULTURES

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Overview

Drawing on findings of a qualitative study¹ exploring the learning processes of individuals working in environments characterized as 'post-corporate' enterprise cultures, this paper proposes a conceptualization of work knowing as *co-emergence*, at the intersection of invention, identity, and environment.

Introduction

Current formulations of working knowledge tend to focus on experiential or 'informal' learning, with careful attention to the role of workplace structures, cultures and communities of practice as these influence an individual's knowledge construction. Extensive critique of these environments have lamented the management of workers' learning and its subversion to organizational goals of material profit and productivity, eventually producing a worker subjectivity as a 'bundle of learning needs'. In this paper, I argue for a conceptualization of *work knowing* which identifies itself with these formulations to a certain extent, but breaks with 'knowledge as substance' and 'individual as knowledge-constructor' orientations.

This argument relies on literature establishing the formation in economic late modernity of worker subjectivity as 'enterprising self', focusing on flexibility inherent in post-Fordist work environments. Edwards (1998) and Garrick and Usher (1999) show the impacts on 'hidden curriculum' and individual subjectivities produced in workplaces where flexible workers (responsive, adaptive, transferable), flexible structures (insecure, fluid, adaptive to consumer demand and changing markets), flexible pay (increasingly contractual) and consequently flexible learning are assumed to ensure organizational competitiveness. Both Edwards and Garrick and Usher suggest that one result is the creation of 'enterprising selves': workers expected to be active, self-responsible, self-reflexive constructors of their own work capacities, biographies and success. Another, of course, is the naturalization of 'flexibility' in various workplace enactments, and a widespread legitimization of (mainly individual) workplace 'learning' as foundation for organizational health, supposedly initiating a wide array of benefits for workers: personal development and productivity, purpose and fulfillment, meaningful relationships, creativity, even spiritual growth and happiness.

These conceptions help illuminate the nature of the shift from essential stability in 'employment' offered in clear exchange for skills and labor, to the current regimes of work fluctuation and casualization, with blurred boundaries between employees' private spaces of self and soul and the turmoil of an organization's hungry growth. The limitation, I believe, is that the focus of these conceptions remains the (large) organization, representing working knowledge as something developed at the intersection of (employee) worker learning and pre-existing workplace structures.

However, I believe there may be a different way to understand both workers and working knowledge. There has been a surge, in Canada at least, of workers (especially women) leaving organizational employment to start their own businesses (Industry Canada, 1999). This phenomenon may be linked to both the prevailing ethos of flexibility and enterprise in late modernity, and individuals enacting Giddens' notion of the 'self becoming a reflexive project'. These individuals narrate patterns of work and learning that appear to resist prevailing conceptions of organization-based 'working knowledge' and learning as individualist constructivism described in the section below. In later sections I outline a proposal for understanding their work knowing as *co-emergence*, a socio-cultural framework calling itself "enactivism" (Davis and Sumara, 1997). I connect this frame with

¹Data mentioned in this paper are drawn from a cross-Canada multi-year study "Canadian Women Entrepreneurs: A Study of Workplace Learning and Development", conducted by a team involving the University of Alberta and the University of Calgary, and funded by the Social Sciences and Humanities Research Council of Canada. In-depth interviews were conducted with over one hundred women working in various regions, many with no business experience or training, who left their jobs to start different kinds of businesses of varying sizes. Participants narrated their challenges and strategies developed in action, the knowledge they considered most valuable, and their understanding of the process of its development. Reports of the study and issues attending the research process and researchers' positionality are available in Fenwick (2000b) and Fenwick and Hutton (2000).

dimensions of *invention* and *identity*, arguing that the resulting conceptualization of an enacted, vanishing 'knowing on the fly' may be a harbinger of epistemology in post-corporate enterprise cultures.

Problems with current conceptualizations of working knowledge

Alongside corporate North America's enchantment with 'knowledge management', 'learning organization', 'employee development', the cult of leadership, and other markers of attempts to control and manage individuals' learning and change, theory wonders about the location and process of producing working 'knowledge', often broadly characterized as 'practical' (as opposed to discipline-centered), or situation-specific (compared to universalized transferable propositions). Any conceptualization of working knowledge is bound to be problematic by the very fixity and distorting effects of academic theoretical convention applied to elusive and interminably complex, contradictory living environments of knowing and doing. However, I believe our collective approaches to working knowledge are especially limited by three tendencies in particular: focusing on individual worker-learners as employees subjugated by a corporate (body of individuals) organization; treating individual worker-learners as constructors of knowledge affected by but not fundamentally a part of their environments; and taking up acquisitive metaphors of knowledge as substance.

First, much recent theorizing of working knowledge focuses on the generic 'organization' as the instrument and site of post-Fordist working practices flowing from dual governing orientations of flexibility and performativity. Individuals are typically cast as oppressed learning creatures: knowledge-producers and regulated subjects of their 'workplace' and its discursive practices, such as its learning technologies. Foucault's notions of governmentality through self-regulation appear regularly in critiques of workplace subjugation of individuals' knowledge:

Through the managerial discourse of 'excellence', technologies of work (power) and technologies of the self (subjectivity) become aligned with technologies of success (motivation and enterprise) such that . . . 'the government of work now passes through the psychological strivings of each and every individual for self-fulfilment'. (Miller and Rose, cited by Garrick and Usher, 1999, p. 67)

In terms of the actual conditions of employment (power-laden work processes and cultural, textual environments which help shape experience and therefore certain knowledge), individuals are rarely represented as active agents. This Foucauldian approach to understanding social systems has been criticized as mechanistic, overdeterministic and inflexible. Of course, the stress on workplace governmentality shaping worker subjectivity is important for illuminating oppressive discourses and their influences on worker's view of themselves and their desires in work and learning. However, it may not sufficiently recognize the dynamics of human agency and its consequences in the social networks in which power and discourse circulate. In a later section I show evidence that in fact many individuals now navigate the postmodern marketplace to establish their own livelihood, reasonably free of organizational governmentality in various forms attempting to excavate their dreams and desires for others' profit.

Turning to the second issue, many conceptions of working knowledge continue to focus on the individual as primary actor in a reflective process of knowledge 'construction', an orientation that is problematized later in this section. The individual discerns objects of knowing or judgment from the environment in an ongoing process of meaning-making, which becomes more acute, resilient, self-reflexive and generalizable as knowledge 'grows'. This orientation sidesteps individuals' formulation of experience within particular discourses, and downplays the extent to which experience is an embodied and elusive phenomenon.

Third, working knowledge is still often objectified as an identifiable and acquirable 'thing' excavated from experience, that can be represented as forms, types and purposes. Despite widespread critique of industry's orientation to commodify and manage experiential knowledge as 'intellectual capital' (Butler, 2000; Garrick and Usher, 1999; Usher and Solomon, 1999) there is still a scholarly tendency to reify knowledge as substance, albeit illuminating new perspectives on working knowledge. For example Hager (1999) argues that "know-how" ('knowing what to do in practice, evident from people's various intentional actions') flows seamlessly from and into workplace practical judgements. In his care to demystify and make visible the creation of know-how, and to reclaim 'practical judgement' as an epistemologically legitimate site for and test of learning growth, Hager appears to stabilize and reify "know-how" as a 'residue' of learning. Context influences (and is acted upon by) individuals and their learning, but remains essentially separate from them.

Beckett (1998) proposes working knowledge as "organic learning" which "brings to awareness what a learned in the doing of the work, while the work is being undertaken" (p. 86). Though careful to recognize how workplace learning arises from 'holistic' human experience situated in particular cultural contexts, Beckett essentially treats 'organic learning' as substantive, the 'gluing together' of thoughts, feelings, and actions, something that can be

'made' and 'clarified'. Billett (1998) produces a sophisticated model of working knowledge that incorporates processes of routine and non-routine problem-solving of everyday work, and the community of practice wherein goal-directed activity takes place. However Billett portrays knowledge as something 'constructed' through interaction between an individual's mental 'structures' and personal history, and the environment. For all three, the individual's mind (albeit *in situ*) is the chief site of the learning process, and representable knowledge (albeit experience-based and somewhat fluid) accumulates as its product. This view is essentially constructivist, retaining an 'acquisition' metaphor of knowledge.

Elsewhere I have discussed critiques of constructivist views of learning and knowledge (Fenwick, 2000a) from psychoanalytic, feminist, post-structural and situational perspectives. Five premises can be drawn from these arguments: (1) that experiential (work) knowing must be theorized as fully embodied (not a reflective process where lofty rational mind excavates messy bodily experience to create 'knowledge') (Michelson, 1996); (2) that individuals and what they construe to be their 'experiences' are completely immersed in and shared among communities of texts and relationships (not moving in but separate from their work contexts); (3) that knowledge resides in participative networks of action (not necessarily in individuals' heads) (Sfard, 1998); (4) that the conscious reflective mind is more limited than much learning theory suspects -- individuals actively resist important knowings and desires, even their own (Britzman, 1998); and (5) that environment and identity co-emerge in enactments of cognition (Varela, Thompson And Rosch, 1991). Beyond these five premises, a useful conception of work knowing needs to address important issues of contextuality listed by Hager (1999): pervasive change and crisis; difference and diversity; the particular and local; and political and social dimensions of knowledge (p. 648).

Enactivism: work knowing as co-emergence

A wide array of authors are now conceptualizing work learning as a process of "changing participation in the culturally designed settings of everyday life" (Lave, 1993, 5-6), variously termed socio-cultural or "situated cognition" (Greeno, 1997), "neo-Vygotskian" perspectives (Sawchuk, 1999), and "CoP" or communities of practice. As Gold and Watson (1999) explain, learning cannot be separated from its practice and the social relations that make it legitimate. The ongoing social process of sense-making results in "the adoption and structuring of practices which will serve to further relationships within a social-cultural context. It is practice that makes a 'curriculum' for new members to learn as 'apprentices' (p. 199). But many of these situated perspectives still treat the environment as supplemental to the individual consciousness, describing an individual subject who *develops* through participative interactions in a community of practice. The concept of autonomous individual mind-- *learning to* participate --remains privileged and fundamentally unchallenged.

Somewhat different from these situated perspectives emanating from a psychological tradition is a conceptualization of knowing called *enactivism*. Grounded in evolutionary biology and complexity theory, enactivism explains the *co-emergence* of knower and setting (Maturana and Varela, 1987; Varela, Thompson, and Rosch, 1991). The first premise is that the systems represented by person and context are inseparable, and the second that change or 'knowing' occurs from emerging systems affected by the intentional tinkering of one with the other. When two systems coincide, the "perturbations" of one system excites responses in the structural dynamics of the other. The resultant "coupling" creates a new transcendent unity of action and identities that could not have been achieved independently by either participant. This is "mutual specification" (Varela, Thompson, and Rosch, 1991), the fundamental dynamic of systems constantly engaging in joint action and interaction. Davis and Sumara (1997) explain that knowing "exists in the *interstices* of a complex ecology or organismic relationality" (p. 110).

Thus environment and knower emerge together in the cognitive process, although this is a false dichotomy: there is no context separate from any particular system such as an individual actor. Understandings are embedded in conduct. What others call tacit knowledge is viewed by enactivism as existing not within individuals in ways that drive actions, but unfolding in circumstances that evoke these particular actions. Much of this joint action exceeds and leaks out of individual attempts to attend to and control unconscious action through critical reflection. The problem lies not in underdeveloped critical abilities that should be educated, but in a false conceptualization of the learning *figure* as separate from the contextual *ground*. Enactivism draws attention to the 'background', and examines myriad fluctuations, subtle interactions, imaginings and intuitions, the invisible implied by the visible, and the series of consequences emerging from any single action. The focus is not on the 'learning event' and its components (which other perspectives might describe in fragmented terms: person, experience, tools, community, and activity) but on the *relationships* binding them together in complex systems. Knowing cannot be understood except in terms of co-emergence: each participant's understandings are entwined with the other's, and individual knowing co-emerges with collective knowing.

A culture of 'post-corporate' enterprise

Garrick and Usher (1999) argue that workplaces are restructured to create 'enterprising selves' among employees, with a focus on learning to elicit employee performance in flexible, new and innovative ways:

Employees are required to be flexible in that they are continually presented with the need to learn about something new that they then have to incorporate into their work . . . preparation for and participation in the contemporary workplace now requires greater flexibility, responsiveness and pragmatism (p. 63)

They go on to suggest that work-based learning is a technology through which selves become enterprising, seeking betterment and fulfillment in the work context. They make a project of themselves and at the same time add value to the organization in culturally sanctioned ways. Edwards (1998), drawing from Beck's (1992) influential notion of the 'risk society', shows how in current regimes of 'reflexive modernization' and flexible specialization, people must construct their own biographies, choosing between different lifestyles, subcultures, social ties, and identities.

One result has been increasing cultural preoccupation with self-created enterprise or "me, inc." as a way of life. Perhaps this is a logical consequence of work messages increasingly emphasizing self-managed careers, individual's responsibility for creating own work and developing own knowledge and skills, coupled with exploding opportunities (especially in internet enterprise) making business start-up accessible to individuals in wide variety of age, culture, class, bodily, geographic, and other categories of potential inequity and disadvantage. Certainly in Canada, interest in self-employment and entrepreneurship² appears in many cultural vectors: home-based business, dot-com ventures, youth moguls, special assistance for women entrepreneurs, media glory-stories, even entrepreneurial education proliferating in school curricula. Smyth (1999) deplores this turn to 'enterprise' culture as triumphal individualist economic rationalism threatening democratic, civic-minded community.

Certainly self-employed individuals are surrounded by discourses of competitive individualism emphasizing unlimited material growth and profit (Fenwick, 2000c). These formulations of entrepreneurship seem committed to initiating new corporations, capital-creating bodies ingesting workers, competitors and territory in relentless and largely unregulated fight for survival. However, entrepreneurship is not unitary: a closer look reveals that within these discourses there is considerable resistance. Certain entrepreneurs talk not about making money but about creating a nourishing work community. They emphasize 'passion' and 'fun' in work, echoing Michelson's (1999) notion of transgressive possibilities of latter-day-Bakhtinian carnival. Their stories of 'doing business' demonstrate an actual commitment to personal fulfillment and quality of life for themselves, their families and the people working with them before material growth and consumption; to sustainability before expansion; to mutually supportive relationships before competition; and to ethical integrity before profit (Fenwick and Hutton, 2000). Others such as Hawken (1993) have offered evidence of this transgressive shift away from traditional models of corporate entrepreneurship. The 'post-corporate' enterprise culture that appears to be emerging may be small, but challenges the subjugation of humanity to material markers of success and size.

It appears that women are a fast-growing part of this culture in Canada. Women's business start-ups have risen dramatically in the past decade, doubling the rate of men's and often outlasting men's businesses (Business Development Bank, 1999; Industry Canada, 1999). Qualitative studies of these women entrepreneurs indicate that many are creating new models of business, work and learning as more relational and ethically-oriented than profit-driven (Gay, 1997; Robertson, 1997; Thrasher, 1998). The women entrepreneurs across Canada that we interviewed had left jobs in (corporate) organizations. About two-thirds had left unhappily, citing reasons of gendered relations and glass ceiling issues, serious ethical conflicts, lack of recognition and creative opportunity. Past jobs were described as "stifling", "on a plateau", "being in a box", "having a noose around my neck", where ideas were 'shut down' or projects terminated mid-stream. All had decided to start their own business partly as an opportunity to "do it my way": live out a creative dream, create their own work environments, contribute meaningfully to their communities, and gain more personal flexibility and control over their work and lives.

Now they are the new owners, catapulted from their former status as workers struggling for identity within organizational environments actively preventing their self-determination along lines of gender, age, valued knowledge and valued performance outcomes to take up positions as independent enterprising participants in global capitalism. Part of their struggle against "sub-plots of the master discourse: namely economic competition

² Entrepreneur here refers to anyone who starts a business employing themselves, of any kind or size, including contracting/consulting, internet, home-based, or small-large business employing staff.

and employee performance and productivity within a neo-liberal framework" (Forrester, 1999, p. 194-95) is to recognize the contradictory discourses swirling within and around them, discerning and resisting those that reproduce the corporate enterprise cultures they fled (Fenwick, 2000c).

A clue to an emerging post-corporate enterprise culture are these women's meanings of success, which presumably derive from and shape their actions within the discursive practices of their environments. Many described their enterprise "success" in personal terms: ("Success for me is to be happy in what I'm doing"; "Having three happy healthy children – that's the biggest"). Many talked about success as their ability to choose daily activity, their daily satisfaction and fulfillment, the quality of relationships comprising their work networks, the contributions they perceive themselves making to their communities, the reputations they build in those communities, and their overall perceived quality of life. Above all most of these enterprising individuals claimed they deliberately resisted dominant cultural measures of success as profit and growth.

Knowing on the fly

Entrepreneurs' stories embody what Edwards (1998) envisions as "active, creative, reflexive, risk-taking workers with certain degrees of autonomy in how they define and achieve their work goals" (p. 387). Most work in environments unbounded by institutionalized roles, norms, and disciplinary knowledge. They *choose* the relational networks in which they will participate, the physical settings and the overall activities comprising their everyday tasks. Like other workers in an age of flexibility and enterprise, they must mobilize resources, see opportunities and act quickly. They engage in continual innovative problem-solving – in fact, invention is a way of being. Especially in the case of small post-corporate businesses, owners must cross many boundaries of knowing, from management and financing to product design and marketing, from daily operations to long term visioning. These people define what counts as 'knowing' in their choices of work activity.

Many entrepreneurs in our study reported that the enormity of what had to be learned hit soon after they made the commitment to a business start-up. (Fewer than 10% of the women we interviewed had any formal business education.) They described their work knowing process as "knowing on the fly", "navigating the mess", "do or die learning", and "discovering our way". Learning was all-at-once, becoming "a jill of all trades" while flying through judgments about which trade and where in the heat of daily pressure to act. A significant first step appeared to be learning how to focus: separating big messy visions into tasks, then discerning and choosing what needed to be learned. Here is the exercise of subjectivity: an entrepreneur may *decide* to take up any of a number of culturally available options of products/services to provide and structures to produce them. Or, the entrepreneur may create new options and incorporate these within the networks in which they choose to participate to remain viable: "We invent it and then figure out what it is." For each choice requiring skill or information, an entrepreneur can either figure it out or hire it out. In their stories of choosing and figuring out, these entrepreneurs seemed to rely on three things: exquisitely careful 'reading' of the systems around them and the consequences of their own actions within these systems; listening to their personal intuition and values (before advice or instruction from others); and circulating new information/ideas into practice, integrating in an on-going process of inventive experimentation.

Invention seems critical. Most entrepreneurs described 'doing business' as a continual process of focused trial and error. Each new step of the business development confronting the owner must be figured out or hired out. The figuring out process was described variously as "learning by stumbling and stumbling", "flying by the seat of your pants", and "tinkering". Thus knowing appeared fluid and located in activity. Continuous invention included learning to discern what was emerging, then naming it and representing it to others. Emotions of exhilaration and some fear often accompanied this sense of inventing one's way into business. Learning to act amidst uncertainty and complexity without a sense of mastery, while trying to frame and construct meaning of a completely unfamiliar situation, became for many a way of working. Most women seemed aware of their resistant positionality: "We do things our way" even if this contravened conventional business practice. Many stories demonstrated struggle between an entrepreneur's commitment to creativity, openness, collaboration and particular ethics --and a highly competitive global market that is in many ways inimical to small business viability.

These entrepreneurs often had difficulty articulating "lessons learned", i.e. 'knowledge' accumulated from a series of problem-solving 'learning' work activities. They claimed difficulty generalizing knowledge from one specific situation to the next. Rapid shifts continually altered their relationships with suppliers, other providers, economic conditions and policies. Changing customer demands required continual innovative experiments. Unanticipated opportunities – and inspiration -- continually presented themselves. Many women eschewed traditional 'business planning' for constricting this fluid knowing 'on the fly'. Some developed a personal need to keep trying new things, exploring new creative challenges. Constant invention staves off boredom.

However, when pushed to talk about the 'knowledge' they had developed, many described self-knowing as the most important 'residue', if any, of their enterprising work experience. Becoming confident in one's choices and ability was probably the most frequently mentioned personal change: Women said things like "I am a different person today than I was in that job – completely different"; "The biggest thing is learning how to problem solve for yourself, taking responsibility for your own mistakes and your own decisions"; "Now I don't beat myself up – just admit it and fix it"; "I've learned not to take things so personally"; "I am respected in this community, I have built a reputation – that's what I have learned"; "I've shown I can do it – I love it – I would never work for someone else, ever again". The 'knowing' they appeared to recognize and value most was an identity of efficacious self-in-action, self-determined, creative, inspiring, and woven into networks of belonging and action – where one knows one has influence and agency. These values were, of course, indebted to received meanings evolving within social structures and cultural discourses in which these women functioned.

Thus knowing appeared to co-evolve in a complex relation with daily choices that created the enterprise, which interacted with the evolving systems within and around these people in spontaneous and adaptable ways. Sumara and Davis (1997) describe this enaction "a continuous enlargement of the space of the possible" (p. 303). In other words, people participate together in what becomes an increasingly complex system. New unpredictable possibilities for thought and action appear continually in the process of inventing the activity, and old choices gradually become unviable in the unfolding system dynamics.

Conclusion/implications for understanding work knowing

These women's work lives appear to challenge our concerns that, as Usher and Solomon (1999) put it, workers' experience is treated as "manageable and in need of management" – involving struggles over how the meaning and significance of experience is interpreted and by whom. As participants in a post-corporate culture, these women seem to resist certain so-called marketplace imperatives, crafting new models of work, entrepreneurship, and success, and creating spaces for learning that are not limited by conventional notions of worthwhile work knowledge and processes for its production. Their enterprises seem to enact vivid, empowering environments and subjectivities through networks of knowing and relationship. In an age of lumbering corporate obsession to capture and codify 'knowledge capital', these 'small' environments of enterprising action can move swiftly and freely. For the new enterprising worker subject acting within highly unpredictable, fluid and ambiguous contexts, all notions of reified knowledge or 'learning' as outcome – whether practice-based or disciplinary -- are considered rigid and irrelevant. In fast-paced flexible work arrangements, knowing co-emerges 'on the fly' with a project, community, and attendant identities.

These are small sites of work/learning/creating, not big organized resistance/challenges. There is no place for hero-rescuers here. In fact, there may be little place for educators per se, with our penchant for planning programs, liberating imprisoned consciousnesses, 'facilitating' useful change for other people, and reifying a phenomenon of 'working knowledge' upon whose existence ours depends. Instead, focus must be directed to subtle particularities of 'context' created through the knowing of complex systems, embedded in their constantly shifting interactional dynamics, and the relations among these particularities. Theorists of working knowledge need to become alert to a "complexified awareness . . . of how one [individual] exists simultaneously in and across these levels, and of how part and whole co-emerge and co-specify one another" (Davis and Sumara, 1997), p. 120).

At any rate, I believe that these women's stories offer hope amidst our pessimistic discourses of 'inevitable' globalized capitalism fuelled by the lifelong learning of managed subjectivities. They may herald an emerging post-corporate enterprise culture reflecting Wright's (cited by Butler, 2000) demand: "The ethos of enterprise must . . . be actively constituted, the truth of enterprise culture attached to the attributes of personhood and citizenship." If so, this fledgling culture and its enterprising knowers on the fly deserve further examination.

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PRODUCTIVE LEARNING AT WORK: IS THERE A ROLE FOR MATHEMATICAL (AND OTHER) DISCIPLINARITY?

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Introduction

McIntyre and Solomon (1999), among others, note the importance of communication within the workplace. In particular they identify at least two workplace discursive practices — those of valorisation of knowledge and of the workplace as a learning organisation — for which a working knowledge of mathematics may be considered implicit. Although mathematical knowledge is individually named in the Mayer Key Competencies it is imbricated in all others, and arguably in the construct of broad occupational competence (Onstenk, 1998; in press). However, the history of vocational education and training (VET) in Australia indicates that its curricular presence (even when transformed in the guise of numeracy) remains unproblematised, drawing upon essentialist, school-oriented epistemologies and pedagogical texts. Workers' actual and potential mathematical knowledges remain largely unrecognised whilst irrelevant, often infantile pedagogic texts form their subjectivities as doers rather than knowers, always in need of more training to adapt to ever-changing technologies of workplace plant and management.

In the Australian VET sector there is, in the 2000 call for tenders, no discipline-based research funded by ANTA — rather teachers and teaching, and perhaps even curricula, are taken as generic. In the 1999 round, literacy and numeracy were agglomerated in a consolidation study spanning further education and vocational courses. This is in contrast to some comparable European countries where research institutes have dedicated vocational mathematics study centres. Over the past three decades a burgeoning mathematics education research community has evolved, encompassing more latterly adult learners, dedicated to the amelioration of mathematics teaching and learning at all educational levels. Questions arise then as to the motives for the perpetuation of ignorance in relation to issues of epistemology and pedagogy of mathematics in a technologically-oriented sector, not least the dearth of discipline-based professional development. This paper will elaborate on these issues and suggest possible ways forward in ways that enhance the future of individual learners as well as the broader Australian society including industry.

Broad occupational competence and mathematics

McIntyre and Solomon (1999), among others, note the importance of communication within the workplace. In particular they identify at least two workplace discursive practices — those of valorisation of knowledge and of the workplace as a learning organisation — for which a working knowledge of mathematics may be considered implicit. Although mathematical knowledge is individually named in the Mayer (1992) Key Competencies it is imbricated in all others, and arguably in the construct of broad occupational competence, described by Onstenk (1998, p. 126) as "a multi-dimensional, structured and internally connected set of occupational technical, methodical, organisational, strategic, co-operative and socio-communicative competencies, geared to an adequate approach to the core problems of the occupation."

According to Ellström (1998) many definitions of workplace competence implicitly presuppose a functionalist, adaptation perspective, defined and evaluated in terms of successful performance of certain given or predetermined tasks. Yet Ellström claims that this perspective

fails to recognise the active modification and subjective redefinition of the work task that occurs continuously and with necessity during the performance of a job. . . operators in many complex production systems are in a certain sense involved in a continuous process of redesigning and improving the system. In contrast to an adaptation view, the developmental perspective strongly emphasises that people have a capacity for self-management, and that they also are allowed and expected to exercise this capacity. (p. 44)

He continues that much developmental work is complex in character, with a need to move between routine and non-routine work. The National Board of Employment, Education and Training/Employment and Skills Council [NBEET/ESC] (1996) adds that organisations are increasingly recognizing that their most valuable asset is the relationship between their people's skills, their culture (values and norms) and their processes. The report proposes that the skills of information literacy (including the ability to decode information in a

variety of forms — written, statistical, graphic — and the critical evaluation of information) together with systems thinking, will be needed.

The knowledge economy demands a competency that links information management skills, system thinking and learning skills, and information technology competency at various levels of sophistication. What is proposed is a new form of literacy for the knowledge economy — information literacy — a literacy that combines information collection and analysis and management skills and systems thinking and meta-cognition skills with the ability to use information technology to express and enhance those skills. In a society of information 'glut' the ability to detect 'signal' from 'noise' will become increasingly valued. (p. 74)

The NBEET/ESC report, drawing on the work of Salner, asserts that the following competencies are involved:

- the ability to see parts/wholes in relationship to each other and to work dialectically with the relationship to clarify both similarities and differences. In effect, this means the ability to balance the processes of both analysis and synthesis;
- the ability to abstract complexity so that organising structures (visual, mathematical conceptual) are revealed rather than imposed;
- the ability to balance flexibility and real world change against the conceptual need for stable system boundaries and parameters;
- command of multiple methods of problem solving as opposed to employing a limited range of algorithms to the widest variety of situations; and
- awareness that the map is not the territory, and the ability to act accordingly in the use of systems models. (pp. 75-76)

The requirement for broad-based systems thinking is implicitly recognised in the recent emphasis on cross-disciplinary team work in organisations — a point to which I will return. From the above, both information literacy and systems thinking can be seen to draw heavily on what are recognised as included in disciplinary mathematics thinking skills (e.g., Davis & Hersh, 1981/1990).

There is a burgeoning research literature to support the claim that mathematics may be utilised in the workplace decision-making and justification far beyond the most obvious uses of number and measurement; this becomes particularly evident in times of communication and mechanical breakdowns (FitzSimons, 2000b).

Mathematics education in the Australian Vocational Education and Training (VET) Sector

In this section I will consider aspects of what Bernstein (1996) terms the *recontextualising field*, the linking of the disciplinary knowledge of mathematics to the workplace through curricula and pedagogies of the vocational education system.

In Australia the provision of vocational education and training has in the past been criticised, fairly or unfairly, for not meeting the needs of industry (Kell, 1994; Ryan, 1999; Sweet, 1993); McIntyre and Solomon (1998) suggest that under contemporary conditions of knowledge production this situation is likely to be exacerbated. In particular, I assert that in matters of curriculum and pedagogy vocational mathematics education has failed to keep abreast of relevant research emanating from and being taken up in other sectors of education, arguably to the detriment of both students and industry (FitzSimons, 1997, 1999). The lack of a disciplinary research base for curriculum and pedagogy in mathematics predates the competency-based education and training (CBT) era; the situation has, if anything, deteriorated with the implementation of the National Training Framework (NTF) in its replacement of the concept of curriculum as the central pillar of vocational education by industry competency standards.

Under the nationally accredited curricula which accompanied the introduction of CBT and its supposed foundation upon occupational analysis (e.g., Blackmore, 1999), mathematics curricula were atomised and students at lower Australian Qualifications Framework (AQF) levels were offered a diet of 'basic skills' of number and measurement that was so alien to many in their formal education years — albeit with pseudo-contextualisations supposedly taken from work practices. This reductionist approach to mathematics curriculum development, focusing firstly on content derived from an essentialised topic framework (Australian Committee on Training Curriculum [ACTRAC], 1993) and then afterwards trying to find appropriate contexts, tends to ignore the realities of the *actual* mathematical skills (among others) required in the manufacturing and service industries. It also runs counter to Gibbons et al.'s (1994) *Mode 2* knowledge production (discussed below). For example, in FitzSimons (2000a) I observe that operators in the

pharmaceutical manufacturing industry may utilise the entire range of pan-cultural mathematical activities identified by Bishop (1988), namely counting, locating, measuring, designing, explaining, and playing — much broader than the number skills listed under the core module, *Calculations A* (ACTRAC, 1994).

Perusal of the exemplar teacher reference materials (ACTRAC/NFITC, 1995) (or Victorian on-line mathematics courses for Forensic Science) illustrates the naivety of pedagogical strategies for mathematics teaching. Further, it appears systemically that any reference to research-based discipline-related pedagogical knowledge is completely unnecessary. This is illustrated by the recent National Centre for Vocational Education Research call for tenders (NCVER, 2000), where all teaching is apparently taken to be generic. Since the inception of the NTF, and especially with the integration of numeracy into Training Packages, the assumption which prevails in the Australian VET sector appears to be that, following an essentialist approach, specialised mathematical skills and techniques may be learned as and where necessary.

Why has the curriculum and pedagogy of mathematics been taken as unproblematic in the Australian VET sector? Is it through ignorance? Could it be, as suggested by the Senate Standing Committee (1998) report into the profession of teaching, that the general public (including VET sector decision-makers at all levels) assumes that — after long years of apprenticeship in the classroom — they know what teaching is about? The public image of mathematics education is almost certainly portrayed as the transmission paradigm on the part of teachers, accompanied by less than favourable affective experiences on the part of the learners who for the most part terminated their study of mathematics believing that they could not 'do it.' The deregulation of the VET teaching profession means that mathematics, trade calculations, or numeracy education may well be left in the hands of non-specialist teachers, who have a limited mathematical background and a naive appreciation of the range of pedagogies available to mathematics educators, and are without access to any professional support. Why does this unsatisfactory situation seem rarely if ever to be questioned in Australia?

Possibly consistent with Ryan's (1999) theorisation of the mobilisation of bias through rhetoric, the atomised curricula and push for self-paced learning which followed the inception of CBT seem in mathematics (at least) not to have been seriously challenged, even though they fly in the face of international research (e.g., National Council of Teachers of Mathematics, 2000) which advocates connected learning and highlights the value of communication (cf. Onstenk, 1998, in press). An interesting case presents itself at the higher AQF levels, where technicians and para-professionals may be working in collaboration with professional graduates. The NBEET (1995) discipline review of university mathematics — including service courses with cognitive levels which overlap some TAFE mathematics courses — makes serious, research-based recommendations for curriculum and pedagogy, including the appropriate use of technology as an educational tool. In addition it asserts the importance of 'service teaching,' where mathematics is taught by discipline experts rather than vocational specialists. By contrast, in the TAFE sector mathematics departments are all but extinct across Australia and central support, where it existed, has become defunct. The result then is likely to be a tendency towards instrumentalist teaching: follow the algorithms and don't ask any challenging questions. This is a catastrophic state of affairs for vocational mathematics education. How will a developmental perspective (Ellström, 1998) or a 'big picture' of analysis and synthesis, of abstraction of complexity (NBEET/ESC, 1996), emerge and higher order thinking skills be developed under these circumstances?

One conclusion might be that mathematics education is considered no longer necessary, yet this is regularly contradicted by pronouncements from politicians (e.g., Kemp, 1998; Koutsoukis, 2000). These at least bring the numeracy/mathematics debates to the surface. However, following Ryan's (1999) argument about broadening the debate so that specialist knowledge may be excluded, it appears that the decision has already been made to integrate numeracy (and literacy) into Training Packages. This is likely to be a haphazard procedure where curriculum is a non-endorsed component; as Falk and Millar (in press) observe, this strategy has had widely varying results in practice. Stating that every teacher is a teacher of numeracy or literacy is a truism which will do nothing to advance the epistemological and pedagogical outcomes unless the quality of teaching is seriously addressed. But professional development is also non-endorsed. On the other hand it must be conceded that separating mathematics education from vocational education has not always been a successful strategy, particularly when mathematics teachers have little knowledge or interest in the vocation at hand or are forced to teach groups (sometimes from assorted courses) in self-paced learning mode either face-to-face or by distance education means. Even with the best of intentions, it is not always easy to work around inappropriate curricula, let alone vaguely formulated (in educational terms) competency standards — however, see Clemans, 1997; FitzSimons, 2000a for exceptions. The challenge becomes even greater when it is considered that professional development specifically for vocational mathematics educators is virtually non-existent.

Apart from ignorance, what might account for this apparent disinterest in the teaching and learning of mathematics as a discipline in the Australian VET sector? Perhaps the explanation might also lie at the institutional level. Having considered the weakening boundaries of mathematics as a discipline in the recontextualising field, in next section I consider what Bernstein (1996) termed the concept of *classification*, with the weakening boundaries between academic and workplace knowledge production and reproduction, theorised by Gibbons et al. (1994).

The de-institutionalisation of education

As old boundaries between theory/practice, disciplines, learner/worker, working/learning become blurred, and therefore contested, McIntyre and Solomon (1998) suggest that the state has actively been seeking to reshape institutional forms of vocational education (in both university and VET) away from what they term the *socio-democratic settlement* in education through the mechanism of work-based learning. In essence, they claim, this amounts to externally mounted challenges to traditional discipline-based knowledge production — these call into question the institutional power of the universities by means of a politics of curriculum, attacking the accepted order or codification of academic knowledge. Curriculum in workplace-based learning is almost completely defined by work activities. While there is contestation between the workplace and the academy, as mentioned above another layer of complexity is added with the worker/learner confronting their own issues of identity and subjectivity, as well as taking responsibility for their own learning.

The theorisations of Gibbons et al.'s (1994) 'new modes' of knowledge production help to explain the shift from *culturally concentrated* to *socially distributed knowledge*. Referring to the interface between contemporary workplaces and higher education, they argue that the adequacy of traditional knowledge producing institutions is being called into question with the emergence of a new mode of knowledge production, *Mode 2*, characterised by transdisciplinarity and heterogeneity, heterarchy and transience. In contrast to the academically constrained problems of *Mode 1*, those of *Mode 2* are set in the context of application and are more socially accountable and reflexive. They give support to the NBEET/ESC (1996) quotations above for the importance of the ability to solve problems through selecting relevant data and having the skills to organise them appropriately, even imaginatively. It would appear that the mathematics used in the workplace is aligned with *Mode 2*, emanating as it does from a broad range of considerations. Is there, then, a role for the discipline of mathematics for vocational students in the new order of learning and work? This question is particularly important as *Mode 2* knowledge production transcends social and traditional hierarchical levels; communication may, of necessity, take place across the traditional workplace demarcations.

Even though the culturally concentrated knowledge of the academy is challenged by the instrumentality of workplace-based learning, according to McIntyre and Solomon (1998) workplace-based learning still requires disciplinary knowledge in order to constitute itself. This leads to the question as to how the transdisciplinarity suggested by Gibbons et al. (1994) can operate without a firm disciplinary base; workers need to be competent in disciplines such as mathematics in order to communicate effectively in times of crisis or creativity. This is not to suggest that they need high academic levels of abstract theory; rather that they need to have developed higher order thinking skills around the breadth of mathematics that they actually confront as workers and as citizens in a democracy, including being cognisant of the 'bigger pictures' such as symmetry, randomness, chaos theory, recursion, infinity (Ernest, 1998), and the broad principles of economic and social modelling which underpin many decisions which affect their daily lives. As Drucker (1993) observes, the qualitative aspect of knowledge — its productivity — is more important than the quantity.

Marginson (1997), McIntyre and Solomon (1998) and others assert that workplace-based learning is a particular commodification of knowledge. One manifestation of this process is the concept of *flexible learning*. Here, it implies the modularisation and customisation of courses and delivery outside of the regular institutional sites and times — possibly face-to-face but increasingly through print and electronic media; almost always self-paced. Lindsay (1999), drawing on Nicoll (1997), suggests that the concept of socially distributed knowledge is at the heart of flexible learning; in the neoliberal strategy of conflation of learning and work, the implementation of flexible learning is reduced to a technical problem. In other words, the system of flexible learning structures and associated credentials are being harnessed ostensibly for the good of the nation and individuals as members of society, but it would appear that they are actually serving as a means of control over worker/students and their teachers. In the next section I consider the complementary effects of these neoliberal ideologies on workers' identities.

The construction of workers' subjectivities

As Habermas (1963/1974) observes, under an ideology of technical control, subjective value qualities are filtered off and respective claims cannot be evaluated. Authorities wishing to secure socially binding commitments, posits Habermas, complement positivism by mythology. Under the pretext of making lifelong learning more accessible, *flexible learning* and *workplace-based learning* are being promoted as important strategies, supposedly encouraging learning when, where, and how the learner wants it (ANTA, 1999, n.d.-a). Drawing on Bernstein's (1996) concept of *trainability*, citizens are persuaded firstly that they are ever in need of training and secondly that responsibility for cost lies largely with them as supposed beneficiaries. However, as Bagnall (2000) suggests, previous understandings of the sentiments of lifelong learning discourses, such as individual or communal democratic development, have become corrupted and reduced to jejune offerings, skeletal versions of possibilities worked by adult educators in the past. Only what he terms the *adaptive progressive sentiment* appears to be appropriate in its individualisation and the creation of "a mind-set of ephemerality, changeability and fragmentation" (p. 30). However, Bagnall notes that its liberatory emphasis is only for the culturally privileged; for the remainder the discourse is directed to fitting them to the cultural realities and ideologies informing those realities.

Current vocational mathematics texts form workers' identities in a certain, school-oriented way; the genre of trainers' guides such as ACTRAC/NFITC (1995) encourages behaviour which is pedagogically infantile, dependent, compliant, and stresses conformity, acceptance of lack of real meaning, and tolerance of boredom. Workers' accumulated workplace knowledges are systematically denied, while their prior experiences of learning mathematics tend to act as a barrier to lifelong learning. One possible explanation for this positioning of workers as educational infants, perennially in need of retraining, is to enculturate them to accept management decisions unquestioningly and, more sinister even, to accept the denial of promotion as they fail to achieve the relevant level of certification. Even at higher AQF levels mathematics texts encourage similarly docile behaviour (FitzSimons, 1996), and require a great deal of creativity and professional expertise on the part of enthusiastic mathematics teachers to engender attitudes such as those desired by NBEET/ESC (1996).

Supposing that the intentions of government and industry are in fact to develop creative, independent-thinking, problem solving workers. What factors might militate against real change in vocational mathematics education? Or support it?

Is disciplinarity possible?

At a personal level many people (including industry leaders) have ambivalent feelings towards the discipline of mathematics, seeing it as publicly important but privately admitting feelings of alienation and lack of self-esteem. Niss (1994) terms this the *relevance paradox* — mathematics is regarded as objectively important for society while appearing as subjectively irrelevant, except for relatively trivial uses such as shopping and home decorating. (This is apart from its gatekeeping role!) As mathematics becomes more and more embedded in technology its visibility is decreased; few people apart from those with an interest in current affairs are likely to consider its role in economic and social modelling, for example. In industrial settings mathematics is often perceived as other to the tasks accomplished even when these are mathematically-based (Cockcroft, 1982); Coben (2000) suggests that 'mathematics' is the label given to that which is beyond the individual's capacity, while all else is perceived as 'common sense.' Even among higher AQF level science students, mathematics is perceived as being limited to the calculation of algorithms or evaluation of formulae (FitzSimons, 1994). Although mathematics underpins the technological formation (Hülsmann, 1985), as mentioned above its explicit uses are only called into question when a breakdown in industrial equipment or communication occurs. This invisibility leads to trivialisation of curricula and to ignorance of pedagogical content knowledge requirements. In a sector where the student cohort has arguably the greatest need for skilled professional educators, this is a serious issue in view of the argument above that most people enrolled in VET courses, and many of those who make decisions on their behalf, have left school believing that they cannot do mathematics.

In some European countries there is a genuine interest on the part of industry leaders and bureaucrats in the development of appropriate and engaging publicly-funded mathematics courses for vocational students. These are to be found, for example, in The Netherlands (e.g., the *Techniek Wiskunde ICT Natuurkunde* [TWIN] project) and Denmark (e.g., the *Fagmat* project), where mathematics education researchers operate in collaboration with government and industry. While recognising that these countries operate under different political and social ideologies from Australia, it may be possible to learn from work already done, adapting and developing their research.

Problem-based learning may provide a solution to the issue of relevance (e.g., Brown & Keep, 1999; Onstenk, in press), and there are certainly possibilities here. However, as in these European examples, an essential feature is collaboration between mathematics education researchers — not just practising teachers, no matter how well-intentioned — and industry/enterprises/ITABs, encouraged by government. Another feature of the European examples is the integral role played by professional development in the dissemination of the innovative teaching materials and practices. In an era when few VET mathematics teachers are familiar with recent technological tools utilised commonly in schools and universities for performing and learning mathematics, professional development focused on new learning technologies (NCVER, 2000) is necessary but not sufficient.

Conclusion

I believe that there is a role in vocational education for the discipline of mathematics to support technological innovation. I cannot accept that teaching is generic as ANTA suggests; nor that sound mathematical knowledge can be developed by workers through skills teaching only as/when necessary, from people who themselves may have had a less than adequate educational experience in mathematics. In order to enhance productive learning at work, and to increase productivity in the workplace and elsewhere in the community, collaborative research between mathematics educators and industry is essential. De-institutionalisation may be turned to advantage if it supports collaborative work between the academy and the workplace in the Mode 2 style of knowledge production outlined by Gibbons et al. (1994). However without a firm foundation in mathematics (and other) disciplinary knowledge beyond the traditional hierarchies of school mathematics — themselves not justified by mathematics or mathematics education research (Ernest, 1991) — the outcome for all concerned is likely to be hollow.

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TEACHERS REDEFINING PROFESSIONALISM AND PROFESSIONAL DEVELOPMENT

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Teachers redefining professionalism and professional development

Many current educational reform initiatives are predicated on the professionalization of teaching (Darling-Hammond & Goodwin, Hargreaves, 1992). Professionalization implies that teachers assume and practice increased control in many areas of non-instructional decision-making, engage more closely with colleagues in technical core matters than is now the case, and develop a greater critical capacity to question curriculum content and methods. Rather than retaining a preoccupation with procedural knowledge (How do we do this?), teachers as professionals are called upon to grapple with larger educational purposes and directions (Why are we doing this? Should we be doing this?). In a more professional culture, teachers assume greater responsibility for generating their own expert knowledge, thereby enhancing their ability and potential contribution for school-wide and system-wide decision-making.

If we accept that the enhancement of teachers' professionalism—how teachers define themselves as professionals—is a way for improving schools, then a potentially viable means is teacher participation in multiple forms of systematic inquiry, whether action research, program evaluation, or large-scale assessment. Teachers' participation in carrying out applied research within the school setting and in larger-scale investigations promises to increase teacher use of research knowledge and, potentially, contribute to organizational learning at various levels. Involving teachers in "hands-on" research may foster those "dense interpersonal networks" (Cousins & Walker, 2000) required for meaningful sharing, discussion and reflection, leading ultimately to the social construction of knowledge. Such knowledge will therefore be likely more usable at the local level because of its meaningfulness to teachers and their ownership of it.

Although large-scale assessment has been often portrayed as inimical to the interests of teachers and as an anathema by professional bodies (Barlow & Robertson, 1994), little primary research has touched upon the impact of large-scale testing on teachers' self-identity, their sense of professionalism, and their use of evaluative research. In this study, we examine why teachers were motivated to take part professionally in the 1998 national School Achievement Indicators Program (SAIP) large-scale literacy assessment in Canada, how they changed in their professional perspectives, and the ways that this participation has affected their professional development.

Professionalization and professionalism

What we deem as efficacious professional development will hinge on our conception of a professional and professionalization as a social process. In fact, there are at least four major schools of sociological thought about the historical emergence of professions as distinct groups within society. Functionalists focus on the evolution of a special relationship between client and professional; professionalization entails the institutional development of guarantees for this preferential liaison through educational qualification, credentialing, codes of ethical practice and professional etiquette, along with other cultural guarantees that sanctify the professional-client relation (Abbott, 1991; Bledstein, 1976; Forsyth & Danisiewicz, 1985). Power theorists focus less on the rapport between client and professional, and more on the exclusionary and inclusionary power of membership. They emphasize the professional's desire to monopolize a body of knowledge or repertoire of technique as an expression of autonomy against outside control, and as a bulwark against the corrosive influences of capitalism on professional skill and autonomy. Professionalization involves image building through an ideology developed for the purpose of acquiring and maintaining power (Hogan, 1992; Larson, 1977; Robertson & Barlow, 1994; Robertson, 1998; Runté, 1998).

A more current theory of professionalization emphasizes the importance of knowledge, its construction, and the professional's position within that epistemological web (Abbott, 1991; Cousins & Walker, 2000). The central task in professionalization is for an occupation to develop a knowledge base, and to construct intellectual institutions that support it, or to convince academic institutions to buttress the profession through programs to educate/train practitioners. A fourth school of thought about professionalization (Fielding & Portwood, 1980; Torstendahl & Burrage, 1990) presumes that relations with the state are pivotal to the

emergence of professions. Professionalization occurs through affiliation with and recognition by the state (department or ministry of education) which assigns a measure of social status and authority to the profession and, by extension, to the practitioner.

Professionalism and professional development

Our view of the desirable direction that professional development should take will depend on which school of thought we embrace regarding professionalization. What is the desirable element in 'professionalism' that is being developed? A functionalist will extol those activities that enhance the professional-student relationship, whereas the power theorist would emphasize teacher empowerment to gain further control over a specialized body of knowledge and skills that have heretofore been monopolized by others. For example, an inservice session organized on practical procedures for resolving student conflict might be preferred by the functionalist, whereas the power theorist might recommend a professional seminar on the legal obligations and rights of teachers in matters of student discipline. Those with a knowledge orientation would advocate the creation of multiple ways wherein teachers can work collaboratively in the social construction of a pedagogy, whereas members of the "state relations" school would highlight those professional activities recognized, endorsed and having the *imprimatur* of the department/ministry of education. For instance, the knowledge theorist might see a teachers' convention program on taxation and retirement planning as within the bounds of sound professional development; the state-relations theorist would likely not, emphasizing instead such officially recognized activities as curriculum development committee work, marking provincial/state examinations, and workshop facilitation for curriculum implementation.

All four schools of thought emphasize the active participation of teachers in organizational development, and in building individual and organizational capacity through the assimilation of information. As instructional practices have shifted to a transactional mode, so too has professional development moved to a transactional model in which teachers identify their own needs, then take responsibility for meeting those needs in a consultative, interactive way. The hierarchical concept of expert informing or transmitting information and skills to an unsophisticated novice has evolved to a collegial process wherein all participants are equal learners and each has a contribution to make. As well, the transactional mode stresses self-reflection on practice in the light of curricular change and innovation. This model is recursive; professional development is not a one-time blitz but an ongoing series of discussions and episodes of implementation, practice and refinement. Through the social interpretation of information, professionals contribute to the development of a learning organization.

Professional development and large-scale assessment

A fundamental issue, then, is whether large-scale assessment, as a form of systematic inquiry, promotes or erodes the professionalism of teachers in a climate of educational reform. Certainly many teachers and their associations are predisposed to view large-scale testing programs with a jaundiced eye. State-mandated tests are frequently castigated as an external form of educational and social control that disenfranchises the professional. Large-scale testing, or "standardized testing", as teachers' associations abjure, is professionally debilitating in several ways because of its controlled design. First, critics argue, it devalues teachers' pedagogical skills in fostering learning or behavioral growth in youth (Runté, 1998): "The greater the degree of curricular specificity dictated by the external examination, the more limited the teachers' need for, and claim to, professional autonomy." (p. 167). Second, large-scale assessments are appendages of state or corporate authority (Robertson, 1998) and thus run contrary to the sense of personal vocation or social mission that motivates many teachers in their practice. Third, the substantive and procedural aspects of testing substitute for, take precedence over, and frame that body of content and pedagogy which professionals assert is their right to control (Wideen et al., 1997). And fourth, testing deskills teachers by usurping and supplanting their judgemental right of appraisal and evaluation.

We posit that this latter right is one of the hallmarks of professionalization as theorized in all four schools of sociological thought: society's investiture of authority in specifically educated groups of people to render judgements on people and thereby affect a client's destiny. A teacher's expertise is tied up with the recursive judgemental process of matching curricular content with appropriate instructional techniques, and effective classroom management practices, in diverse and fluctuating circumstances, to promote the growth of young people. Thus, successful teaching involves applying highly refined skills in evaluating student work, in measuring cognitive and affective growth, and in determining grades for student performances for reporting to various audiences - to the student as client, to the parent for whom the teacher is operating in *loco parentis*, to the school division as employer, and to the state for which the teacher may function as public servant.

Although research indicates "high-stakes" centralized testing does undermine teachers' professional autonomy (Runté, 1998; Wideen et al, 1997; Anderson et al., 1990), is this the case with "low-stakes" assessments? How does participation in a large-scale literacy assessment, and its scoring processes, affect teachers in their sense of professionalism? How does active involvement in large-scale systematic and systemic inquiry change their attitudes as autonomous professionals, and their relationships with colleagues, parents and students? How does participation affect a professional's skill in rendering evaluative judgements, and his/her instructional and assessment behaviour? What is the impact of direct involvement in national testing procedures on teachers' professional development?

The interviews and informants

To investigate these questions in a qualitative multiple case study, we interviewed four teachers from a pool of approximately 80 Saskatchewan (Canada) teachers who volunteered for and accepted a position to score the national reading materials for the Council of Ministers of Education Canada's (CMEC's) School Achievement Indicators Program (SAIP) testing in 1998. We chose these four informants, using Goetz and LeCompte's (1984) guidelines for typical-case, criterion sampling, because they represented a range and variety of teaching experience, both urban and rural, currently taught in different centres, and represented both genders. Participants were interviewed three times: prior to the scoring session in the spring of 1998 after recruitment; during the actual scoring session at the end of week one in the two-week July 1998 undertaking; and six months after the scoring session when teachers had recommenced their classroom teaching duties. All interviews were conducted by the researchers and were tape-recorded. Interviews 1 and 3 were conducted individually by the researchers. The second interview was a group interview in an informal setting with all four informants involving both researchers meeting after one of the days' scoring sessions in July. This group interview was also tape-recorded for later transcription. Informants provided informed consent; pseudonyms are used throughout in reporting findings.

Ratna was a secondary English language arts teacher who had begun her career thirteen years' ago in a small rural school. A year later, she began teaching in large, city collegiates, finishing a post graduate diploma in educational administration in 1993. Ratna is teaching half-time as she raises her young family. She has been active with local and provincial teachers' associations, and has been involved in curriculum committees at both the local and provincial level. She has aspirations of finishing a master's degree and moving into educational administration. She has no previous experience with large-scale assessments and their administration, nor with scoring the materials.

Ted began teaching in the far north before moving to a city, for a total of six years when he was interviewed. Ted tries to keep up to date with research by reading professional journals and books. He incorporates such strategies as readers' and writers' workshop in his classroom. He has written for provincial professional journals, and has participated in a writing benchmarks project with his school board. He has also presented workshops at teacher conferences. Ted undertook with a colleague a teachers' association-funded project involving action research on students' changing perceptions towards reading in a process approach classroom. He has also conducted inservices for Grade 8 teachers in his school division in support of implementation of a new English language arts curriculum.

Felicity was beginning her fifth year of teaching the middle grades when she was interviewed. She was beginning a masters' degree in curriculum studies, and was on the language arts implementation team in her school division which is situated in a large urban area. Like Ted, she was involved in the writers' benchmark project with her city school division and found it a very positive professional experience.

Kirk has been teaching for 12 years at both the elementary and high school levels, mainly in the area of music, but his assignment has been exclusively English language arts in the last two years. Kirk has a bachelor of music education degree, with preparation also in English. He has made conference presentations, but has no previous experience with large-scale assessment or marking provincial examinations.

Analyses and interpretation

We present the findings in terms of the pre-scoring interview a month before the national marking exercise, and post-scoring interview approximately one semester after the SAIP scoring session in 1998, and the group interview midway in the scoring session. The interview questions focused on four aspects of professionalism which served as a framework for analyzing our findings: personal and professional motivations for involvement in large-scale assessment; the perceived role of evaluation in classroom practice;

perception of self as an autonomous professional; and the impact of evaluation on teachers' relationships with colleagues, students and administrators. For the purposes of this truncated paper, findings are presented for one of the four only, namely Ratna. (The full report is available from the first-named author.)

All interviews were transcribed *verbatim* using the rules suggested by Ives (1974). Each researcher independently treated the texts of interviews 1 and 3 for all four informants, seeking out themes, issues, motifs, and key words or phrases in an analytic fashion against the existentials of temporality and sociality (Van Manen, 1990). The interviewers then met, exchanged analyses, and reached consensus on the predominant themes and issues for all four informants, for both the pre-scoring and post-scoring interviews. Subsequently, the researchers jointly analyzed the text of the group interview in light of central themes and issues. Quotations used in this section do not identify the speaker because of an inability to distinguish individuals in the transcribed text. Moreover, given the study's purposes, the group experience -- the act of (de)professionalization -- was deemed more important than individual experience -- the sense of professionalism -- at that research juncture. Accordingly, we analyze and interpret these group themes and issues -- turning points or milestones, as we'll call them -- from the second interview in the *Professional Discussion and Development* section of this paper. Our aim in doing so is to convey more directly the informants' collective experience, and push into the background as much as possible our own views of professionalization that are subsequently made explicit in the *Conclusions*. The text of this group interview, produced in the midst of the national scoring venture, is thus considered crucial if not pivotal to understanding of professionalization and professional development through large-scale assessment and, therefore, particularly germane to our study's purposes.

Pre-scoring interviews: Ratna

On the eve of the national scoring initiative, Ratna worried about the negative impact of large-scale assessment because it represented a judgement of teachers' competence; that is, teachers were being evaluated. Large-scale assessment was fear-provoking for teachers, and the way people react to fear is to reject something. "So I think typically that there is a negative attitude certainly toward assessment from what I've heard," she reported, "and I think the general negative attitude slips into the classroom teacher's." The provincial teachers' federation was opposed to national testing, and its stance was colouring individual teachers' attitudes toward assessment. Ratna saw the professional organization as standing apart from and influencing classroom practitioners, rather than enabling classroom teachers to shape and drive the professional organization and its attitudes. Ratna implied that the organization was not reflecting membership attitudes but was rather influencing, even establishing them.

She hoped that assessments were designed in such a way as to guide teachers "as individuals" by setting objectives and assisting them to meet those objectives. She believed this could be accomplished while setting and maintaining standards to move them forward nationally, and to address "the accountability issue". She recognized that standards and benchmarks were necessary for accountability, but she was concerned that teachers are vilified when results are interpreted as unsatisfactory achievement. Ratna deemed the SAIP as controversial. She needed to prove to herself that the SAIP couldn't be so one-sidedly negative. There had to be good reasons why large-scale literacy assessment was being done. Ratna hoped, as a teacher, that the national testing, "was developed to give us some benchmarks and guidelines." She evinced an interest in statistics, wanted to take some tools away, and was excited about meeting teachers from across the country in a professional setting. Yet she wanted to evaluate the SAIP project and experience it personally.

Ratna thus brought a judgemental purpose to the whole exercise, and not only her judgemental skills for deployment within it: her primary motivation was to judge the program, and only secondarily to judge on behalf of the program. In short, the main motive for her participation was moral resolution: is large-scale assessment good or is it bad? She wanted to know whether, "what you're hearing in the media or the way it's being interpreted has been wrong and you want to know [if] there's some[thing] positive going on here".

Ratna had an exceptionally coherent "philosophy of evaluation" in her classroom practice, assuming each student as unique with individual needs for which she sets individual goals. Classroom evaluation provides multiple opportunities for each student to demonstrate they are meeting those goals. At the same time and perhaps in contradiction to her romantic belief that each student has his own standard, she admitted doubts had arisen in her own ability to maintain consistency in holistic evaluation, which she also thought important in classroom practice. Rubrics and team scoring, she felt, would restore confidence in her evaluative procedures, a confidence that she lost while working in the isolation of the classroom setting. Ratna said, "I'm really hoping that I'm going to be inspired in terms of seeing what our students do know. I'm hoping that its going to affirm that they are learning and that we are teaching. I think there's going to be some fulfillment in both ends." Rubrics were an appellate device, according to Ratna, for demonstrating fairness

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after her initial holistic marks have been assigned. Ratna used rubrics on those occasions "where you have to be objective and support your instinctively-assigned mark". Yet she was not primarily interested in the marking session as an exercise in collegial calibration, unlike some of her colleagues (Kirk) who wanted to attune their marking practices with those of fellow professionals.

Post-scoring interviews: Ratna

For Ratna, interviewed six months after the scoring session, the national marking session--in essence-- meant a shift in "paradigms". In her lexicon, a paradigm is a mental map, not a more root-and-branch change in one's values, beliefs or philosophy. She had set out before the experience with the aim of taking away some evaluation tools, and of re-establishing confidence in her own ability to maintain consistency in evaluation. Although she retains her discomfort with large-scale assessment, she reports that the scoring event was "amazing". She thinks that, "any time you have professionals talking like that, that's memorable and that's growth." She couldn't believe that so many teachers could adopt and consistently apply a uniform evaluation scheme to so many pieces of student work over such an extended period of time. It was beyond the scope of her imagination, because she believes so deeply in, personifies, and acts upon her notions of individuality and uniqueness. For Ratna, it is professionally reaffirming to have the scoring session move so many autonomous professionals to such "a common spot and common understanding", but she remains ambivalent about the impact of this exercise as professional development.

For her, large-scale evaluations make "a science out of an art". The act of training for uniformity and consistency entails such a shift in paradigm that it threatens mechanization of participants' thinking, which is anathema to Ratna. She had decided *a priori* that her fundamental values would not change, and neither did they; there are fundamental beliefs that she is "unwilling to abandon". At the same time, she acknowledges that when professionals get together, it provides the opportunity to affirm or re-affirm one's thinking: the resultant shifts of paradigm can create confusion, which can be a creative opportunity leading to professional growth. Ratna confesses that teaching affords, "very few opportunities to affirm or re-affirm that what you're thinking and the confusion you're feeling is actually good" Professional development offers an opportunity to reconsider practice in a self-critical way. As she states, "you start to really reflect maybe more seriously on your views and beliefs". Comparing one's own practice and beliefs to others', especially younger teachers, offers a different mirror for reflection.

But at heart, seven months after the SAIP scoring, Ratna sees evaluation as an obligation. She phrases this in terms of "I'm a people person but once every couple of months I have to become a number cruncher." She resents and resists this; she does not want to become a more efficient, more accurate marker, as Kirk does. Both see evaluation and learning as disconnected, but in very different ways, or for very different purposes. Ratna has anticipated diversity and is amazed to find such consistency in the teachers, male and female, from across the country. Ratna is sensitive to diversity, and was surprised at the commonality in approach achieved in scoring. Kirk, on the other hand, has approached the exercise presupposing a general commonality among students, but has come away from the marking sessions more attuned to the diversity of student experience and competence.

Has the experience widened Ratna's horizons? The question is, in her terms, could you "teach an old dog new tricks"? Yes, it has in her awareness of the common issues faced by professionals across the country; yet participation hasn't changed her views about educational purpose and learning. In fact, she has consciously decided to try on a new conceptual paradigm, but just as consciously decided *a priori* that her underlying professional beliefs and values would not change, or be corrupted by the testing initiative. Ratna had been looking for a professional transformation, to challenge her values, but this has not happened. Thus, ironically, there is a sense of disappointment that permeates her post-scoring commentary.

Professional discussion and development: turning point or milestone?

In historical terms, a turning point often occurs in shifting events or tumultuous situations; it is a conjuncture, spasmodic in nature, that involves decisions or changes that fundamentally alter the course of events in response to conflicting forces. Whereas a turning point is often the intersection of social structure with economic forces, milestones are the intersection of character with circumstance. There is an interplay of individual value systems with practices, both of which may thereby be rendered less inchoate or more refined through their application in controlled situations. A turning point has multiple and unpredictable consequences that are often recognizable only in retrospect, whereas a milestone is episodic but linear in a larger trajectory, a marker in a pattern of continuity. In professional development situations, both turning points and milestones are internal and may affect a person's value system, or their concepts of the desirable.

Nevertheless, a turning point will fundamentally and substantially change practitioners in their day-to-day practice and approach to education, whereas a milestone often entails a confirmation or clarification of pre-existing values and approaches.

Because a scoring exercise entails the extended and consistent application of values to educational products, it elicits a re-examination of professional values, and becomes a form of value audit (Hodgkinson, 1991) which is "a reflective and contemplative effort that seeks to bring within the light of consciousness the range, depth and breadth of one's preferences, conditioning and beliefs" (p. 132). Pre-and post-scoring interviews suggest that the four participants found some resolution to conflicting values about education, rather than shifting profoundly in their praxis and educational perspectives. Although there is a risk of arguing *post hoc ergo propter hoc*, we believe the immediacy and the immersion experience of the national scoring session contributed to teacher professionalism. There was no epiphany, but the national scoring experience appeared as a precipitating event in these teachers' professional development. In returning to the group interview during the 1998 national scoring session, we discern six primary issues in participants' discussion about the meaning of the exercise. These issues illuminate the manner in which participation in the large-scale student evaluation in 1998 served as a milestone and not a radical departure in teachers' professional development.

Affirmation and reaffirmation

When interviewed during the national scoring session, participants affirmed how effectively and creatively students had responded to the reading tasks. One respondent found it "enlightening" to see the variation in student responses. Another remarked on the exposure to a greater range of student ability than he had experienced at the classroom level, and that the provision of five levels of descriptors of student competence made it possible to discern a wider range of student reading ability. For the four interviewees, any doubts in students' ability to articulate their depth of reader response were dispelled by their experiences. The experience too had affirmed expectations about the assessment process, though one person noted that he or she would find it difficult to apply the process at the school level because of the time commitment required. One respondent noted that a "level of comfort" was reached when he or she was able to arrive at the sense that "what you're doing is literally for yourself as well as the project". This, it seems, occurs when a marker has internalized the process and is able to translate it into classroom use.

That understanding may arrive at different times throughout the scoring sessions and in different ways for different teachers. In fact, the conjuncture between individual and group professional purpose might never be reached for some teacher-scorers. In such cases, the national scoring session will not be experienced as professional development but merely as paid work. One respondent noted that she came to realize that the scoring process was "not that far from what I would have done anyway" and went on to state that "I think that is a valuable thing". The speaker realized that the scoring process was both individually valuable, being validated through this national scoring exercise, but also, that it was professionally of value to realize that one's classroom practice had been reaffirmed.

Another respondent likened the national scoring experience to graduate study, in that the experience led her to look "at things a lot differently now". This suggests that the experience provided the opportunity for reflecting on one's practice through comparing it with other models, such as the one presented at the national scoring session. This too seems a significant aspect of professional development, namely the opportunity to put one's practice up against other alternatives, models, and possibilities.

Validation of classroom practice

A central issue for these teachers was to be able to justify the grade they assign student work in their classroom so as, in turn, to rationalize grades to students and to parents. The rubrics used for the scoring sessions, in which all scorers were trained and attuned for consistency, and against others for reliability, gave these teachers the confidence to assign grades that they considered valid, and were hence defensible, being derived through the scoring process with other experienced professionals. At least one respondent believed that grading is not compatible with learning, but that parents in particular are so driven by grades that finding a defensible and fair system of evaluation is needed. The hope for this teacher was that the national scoring session would provide an impartial system of categorizing student performances. In a sense, participants were able to feel professionally assured that the grade assigned was a professionally- and group-derived score, not merely an idiosyncratic one assigned in isolation of other students' products, or of the expertise and experience of other educational professionals. Validation, as a social experience, meant a lot to these teachers, some of whom felt isolated in what they are doing at the classroom level. One described it in these terms: "it really meant a lot of validity to what we were doing...where you're on an island by yourself and it's

very frustrating sometimes". To consider oneself as part of a national community engenders a strong sense of professional satisfaction.

One respondent became aware of gender bias in evaluation through the national scoring exercise that had elicited thinking about the need for assessment tools to be carefully designed so as not to bias scoring along gender lines. It also prompted thinking about one's own, perhaps subconscious, gender bias in evaluation. We would add that possibly more important is awareness of potential gender bias in task construction for demonstrating reading skill, including the literary text, the instructions given, the tasks and audiences suggested, and especially the topics assigned.

Clarification of large-scale assessment's role on teaching and learning

An important realization for these four teachers was the difference between large-scale assessment and student evaluation in the classroom. They recognized that this assessment was "low-stakes", and that student evaluation in their classroom is "high-stakes". As one said, "Not a single one of these marks is going to affect any students. It's designed to evaluate a school system, not students". They became aware of the issues around evaluation -- educational issues, political issues. Implicit in their critique of 'low-stakes', large-scale assessment was the belief that student performance is not a true indicator of ability because students have nothing to lose and thus do not perform optimally. For these teachers, student performance on such high stakes evaluations in the classroom was deemed a more accurate indicator of actual competence, because students were thought to be more highly motivated to perform well in a 'high-stakes' situation.

These informants used the national scoring session to broaden their own evaluation skills. One noted that the experience provided a comparative basis for evaluation that would lead to broadening of his/her own classroom evaluation procedures. This respondent, for example, described how she found that lengthier responses weren't the most thoughtful and insightful ones. Being able to adapt the national scoring experience to classroom use was a tangible benefit for these teachers. One participant described how now he could become more detailed in the criteria used and feedback given at the classroom level, and how he would now "be able to break responses down a lot more". As well, respondents saw applications for student use, in that the rubrics provided could be made available for students to "recognize and almost grade themselves, and understand what's better, and how to get better and move from there". One teacher summed up this process of personalization and classroom application when she said, "it pretty much has to become a part of what you do when you leave". None of these respondents counted external approbation, that is, recognition by school and district administrators, as the driving force for professional development. Rather, they equated professional development with personal development; the rewards were primarily intrinsic and enhanced their own (personal) sense of professionalism.

Enhanced professionalism

Respondents noted that benefits of participation in the national literacy scoring included meeting new people, making links with people in one's own community, sharing ideas, learning new things and developing professionally. Respondents did not perceive their involvement as professional coercion by others, including administrators, and at least one participant remained healthily skeptical (at this midway point in the exercise) about the process and being able to endorse it with his colleagues.

Another informant noted the important implementation opportunity that the experience provided, with upwards of 150 teachers returning to their home communities and being "able to influence innumerable students, perhaps over years and years". She too suggested that being able to take something away from the experience was a benefit of participation. At least two participants saw the potential for leadership by being among the first to transport, to their home school or school division, an evaluative process that would potentially influence other professionals. This leadership role was not only an individual desire for administrative mobility, but also a way of enhancing professional status.

Apprenticeship was another theme identified as related to professionalism. The less experienced teachers in this study had the sense of being novices among their more experienced peers, whom they viewed as seasoned and consummate professionals. One newer respondent expressed the realization she came to as a result of mingling with more experienced peers from across Canada.

I myself must say, being a newer teacher, I found it more rewarding and it's built confidence in myself about evaluating too, because you're checking how you feel on certain questions with

someone that's taught for 25 years. Oh my gosh, they almost have exactly the same thing! You know, that kind of, that's real positive. (p. 25)

Negligible influence of large-scale assessment on literacy

These respondents remained skeptical about the impact of large-scale assessment results on literacy development in schools. They continued to see testing as a political initiative in educational reform, motivated for the wrong reasons by the wrong people (politicians). "It should affect it a great deal, but I don't think it does. And, I think that is the problem because it is a low-stakes thing". This comment reinforces a previous point about the dubious generalizability of large-scale assessment data from students who know that the results have no bearing on their school grades. Another teacher defended the quality of current curricula suggesting that these curricula need to be properly and fully implemented before being considered for revision on the basis of large-scale assessment results.

Philosophical uniforms

All educators practice from a philosophical heart, though in many cases we may not have stopped practice long enough, or distanced ourselves far enough, to reflect on what that philosophical heart is. Sometimes a professional development experience will provide the opportunity of time and/or distance which allows us to confront our own philosophical selves. When that occurs, we may face discomfort, not necessarily with our own professional selves, but with the philosophical premises behind the professional development experience. Then we are faced with a dilemma. Do we participate in the professional development experience and face the philosophical challenge, and possibly even change, or coercion? Or do we turn aside from the experience and avoid the discomfort and challenge?

One of the respondents in our study faced this dilemma during the exercise, and she speaks not only for herself, but for some other teachers who reportedly left the scoring session on the first day because, she believed, they were not prepared to work with the model of assessment presented. Here are her comments, framed in a clothing metaphor.

If you want to go to work in a factory, and you choose to go and work in a factory you might have to wear a factory outfit. And if you don't want to work in a factory get another job. We all chose to be here and part of choosing to be here is we're going to accept their standards....you must accept the parameters and the philosophy by which this study is undertaken, and that is the premise. You have to accept that premise before you can go on here. You have to wear the outfit, whether it is professionally degrading or not.

Professional development opportunities such as large-scale assessment allow teachers to try on different philosophical uniforms, as well as look in the mirror themselves and examine their own pedagogical values.

Conclusions

Scholars have identified three primary uses for evaluative information: instrumentally, to effect changes in program or practice; conceptually, to alter outlooks or ways of defining issues or problems for solution; and symbolically, to reify or undermine a pre-existing policy or position. In our study, we discerned a fourth use: valuably, as the process of helping practitioners clarify what is important and not important in their praxis. For those participants we studied, participation in the 1998 national literacy study enabled them, in fact, to use the evaluative information in all four ways. For Kirk, the evaluative processes provided instruments that altered and refined his classroom practice. For Ratna, the exercise offered an opportunity to try operating within another conceptual paradigm. For Ted, SAIP scoring endowed him with a set of experiences that he could use to reinforce the symbolism of professional leadership. For Felicity, the venture more fundamentally shaped her professional values in student evaluation.

None of the participants saw the scoring exercise itself as detracting from their teaching. In all cases, participation in the "low-stakes" large-scale assessment reinforced teachers' classroom work rather than undermined it. By imparting a sense of confidence, by permitting leadership training, by validating classroom practice, by supplying an external referent for a professional's classroom judgements, and by providing a collegial forum wherein teachers could reflect on their classroom practice, the scoring session for the 1998 national literacy assessment supported teacher professionalism. According to the testimony of participants, this low-stakes CMEC study was not corrosive of their professionalism, but rather served as a catalyst in their professional development. As a crucible wherein values are clarified, a large-scale scoring session

appears to accelerate rather than undermine teachers' sense of professionalism. The four participants here saw the marking session as supporting rather than throttling their instructional and assessment behaviour.

Quite clearly, large-scale scoring events are episodic in teachers' professional lives. "Low-stakes" large-scale assessments in their administration and reporting remain peripheral at best to teachers' classroom concerns. Participants did not see the School Achievement Indicators Program as affecting curriculum except in positive ways, did not see the assessment as distorting instructional processes relating to literacy development of youth, and continued to see the assessment as largely an epi-phenomenon to schooling. We can easily exaggerate the impact that "low-stakes" testing has on teachers and the larger process of professionalization. This implies that the educational community must pay attention not only to pre-ordinate and ideologically-driven ways in which policy-makers, interest groups and the media (mis)use large-scale assessment results after they are generated, but must also investigate the specific ways teachers actually engage in various forms of student evaluation. Values precede and are anterior to praxis. What professionals do with and within an evaluation may be more important than what an external evaluation 'does' with professionals. We conclude that low-stakes, large-scale assessment is a consort of and catalyst to -- not the antithesis of -- teacher professionalism.

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MODELLING THE INVISIBLE: THE PEDAGOGY OF CRAFT APPRENTICESHIP

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Introduction

Craft and its pedagogy is no longer germane in the era of flexible specialisation. The rhythms of labour must now respond to flexible change which seeks to reinvent institutions irreversibly so that the present becomes discontinuous from the past (Sennett, 1998:48). Guile and Young (1999) concur that the master-apprentice relation is a model which seems less and less viable in modern workplaces where continuous change is the norm. Nowadays craft finds its continuation in the niche markets of life style commodities, rather than at the core of major production processes. Its pedagogy has undergone similar attenuation. Long time loops of five to seven years traditionally bound the master and trade apprentice into a time-serving, wage-labour relationship that encompassed technical instruction in the trade, moral instruction in the deportment and values of those who practised the trade and board and lodging on the master's premises. This form of apprenticeship, with its educational and social benefits as well as its underside of potentiality for exploitation of youth labour (Clarke, 1999), has long become an anachronism. The old apprenticeship-by-effluxion-of-time system has been replaced by a division of labour within trade apprenticeships themselves that has dispersed the traditional 'master' into a combination of college-based modules, institutional training and workplace experience, culminating in a formal trade test after a minimum of two and a maximum of four years.

The political economy of craft, trade and apprenticeship is a fascinating and contested topic in its own right, but it is not the focus here. The paper concerns itself with the representation of the structure of craft knowledge and the resultant pedagogy. The central question is: What is about the structure of craft knowledge that makes it tacit and not open to verbal elaboration? In attempting to answer this question the beginnings of a critique of the representation of knowledge in terms of sequential, behavioural 'learning outcomes' in vocational education and training (VET), is produced 'by default'.

The first part of the paper puts forward a conceptual framework for understanding why tacit knowledge is indeed tacit. The paper then refers to an ethnographic study of apprenticeship in the trade of cabinet making to illuminate a knowledge structure coded as 'tacit' and therefore amenable to modelling rather than explicit verbal instruction. In South Africa the traditional craft of furniture maker has been broken up into the associated trades of cabinet maker, wood machinist, frame maker, furniture polisher, upholsterer and wood carver. The trade of cabinet maker is also to be distinguished from the various carpenter-joiner trades regulated by the building industry. In both industries instruction in the trade is divided between trade theory and practical trades training.

Knowledge in particular: the case of craft

Any attempt to get a grip on the internal principles that structure craft knowledge leads to the 'big divide', namely craft in its traditional sense and craft as a deskilled series of operational tasks. Numerous studies in labour process (Braverman 1974; Littler, 1978; Thompson, 1989; Thompson and McHugh, 1990) have analysed the progressive erosion of worker's skills through various mechanisms of management co-ordination and control in Fordist systems of mass production that find their ideological justification in F.W. Taylor's 'scientific management' - showing how competing interests for control of craft dislocated craft from its original collective social base and relocated it, within modern production systems, in diluted and fragmented form. Within these debates the mechanisation of handcraft practices is also generally accepted as evidence of technological advance which has led to the labour demarcation 'skilled, semi-skilled and unskilled', with no place for the artisan hierarchy of master-journeyman-apprentice.

Posed against this is craft as an integrated, holistic and traditional practice.

From earliest times to the Industrial Revolution the craft or skilled trade was the basic unit, the elementary cell of the labor process. In each craft, the worker was presumed to be the master of a body of traditional knowledge, and methods and procedures were left to his or her discretion. In each such worker reposed the accumulated knowledge of materials and processes by which production was accomplished in the craft. The potter, tanner, smith, weaver, carpenter, baker,

millers, glassmakers, cobblers etc. represented a branch of the social division of labor, was a repository of human technique for the labor processes of that branch. The worker combined, in mind and body, the concepts and physical dexterities of the specialty: technique understood in this way, is, as has often been observed, the predecessor and progenitor of science (Braverman, 1974: 109).

In this unity of thought and action, conception and execution, hand and mind, no distinction is made between 'knowledge' and 'skill'. The idea that they are two separate entities equates skill with timed physical dexterity, a mechanical exercise devoid of human faculties, or what Marx (1976:142) called "abstract human labour", with human knowledge no longer acknowledged in any other than a procedural sense. Frank Gilbreth, a prominent follower of F. W. Taylor, took this conception to drastic extremes in his classification of body motions into 'therblig charts' (his own name spelled backwards) which abstracted labour from its concrete qualities and presented it as standardised motion patterns, thereby reducing it to an interchangeable 'objective' component of the production process. (Braverman, 1974:173-182 offers a detailed explanation of Gilbreth's time and motion study methods.)

For analytical purposes, the traditional handcraft picture painted by Braverman is usually set up against the reduction of craft - through mechanisation or detailed division of technical labour - to a set of routinised operational procedures, arousing Adam Smith's concern at the end of the eighteenth century for the deadening effect on human beings of such specialisation of productive function. (See also Sennett, 1998:35-39, Ainley, 1993:17-189). This concern was later more fully developed by Marx. However, this distinction in itself still does not explain why it is that craft knowledge can only be 'caught' and not 'formally taught' (an expression used in email correspondence between Joe Muller and Basil Bernstein, 8 March 2000). The invention of printing and the invention of the mechanical clock irrevocably changed medieval craft practices, but apprenticeship has remained, despite changes in shape and social purpose, as the way in which the 'head' and the 'hand' are brought together. We therefore need to ask what it is about the particular form of knowledge itself that so stubbornly refuses to budge in making craft knowledge accessible to redescription in terms of general principles and rules. Why must the apprentice learn "from seeing the master perform the activities of the craft, thereby catching the implicit knowing of the profession" (Nielsen and Kwale, 1997)?

David Pye, a professor of furniture design, provides a partial answer to this question. Noting a rising interest in design in the late 1960s, but a neglect of a corresponding interest in work, he asserted that craft, or what he called 'workmanship of the better sort', was necessary not only to realise a design, but so that design could exist in the first place. For him design is 'what for practical purposes can be conveyed in words, numbers and drawing: workmanship is what, for practical purposes, cannot' (Pye, 1968:2 in Ainley, 1993:6-7). Pye draws a distinction between what he calls the 'workmanship of risk' and the 'workmanship of certainty'. He closes the gap between handcraft and machine craft by arguing that in the assessment of the element of risk it is irrelevant whether a task is undertaken by hand or using a machine. The distinction between the two forms of workmanship lies in the degree of pre-determination of the end-result. Where the result is exactly specified beforehand, it is achieved directly, without preliminary approximation or rough work; where it is not pre-determined and the job can be spoiled at any moment, the end-result depends on the judgement, care and dexterity of the worker - or what he calls 'free workmanship'. Since ancient times the use of jigs, templates and other shape-determining systems in the trades, as well as the development of habits of work have been ways in which workers constantly tend to reduce the risk and increase the certainty in any task - so that the risk has almost become invisible. Yet the 'principle of uncertainty' of end-result remains the criterion between 'bad' and 'good' work, or the degree to which work corresponds to the original and ideal conception of it. This is a standard which no human creation can attain - workmanship representing instead an 'approximation to a greater or lesser degree' (Pye, 1968:13, quoted in Ainley, 1993:7).

Once we get this far in our understanding of the nature of craft knowledge, the logical move step is to turn to the philosopher of science, Michael Polanyi's explanation of the inarticulable in the transmission of skill. His famous statement that although expert diagnosticians in various fields can 'indicate their clues and formulate their maxims, they know many more things than they can tell' (1958:88), has become an oft-quoted explanation for the tacit - so that a statement such as the one recently made by a colleague in a seminar, "Well it's tacit you see", is offered as an explanation of that which remains opaque, namely what makes tacit knowledge tacit.

Polanyi's assertion that some things can only be known in practice is based on knowing something as, what he calls, an 'instrumental particular' and not explicitly as an object. Knowledge of such a 'particular' is ineffable and the pondering of a judgement in terms of such particulars is an ineffable process of thought, which cannot be

transmitted in words. He applies this insight equally to connoisseurship as the art of knowing and to skill as the art of doing. Both, he says, 'can be taught only by aid of practical example and never solely by precept' (*ibid*).

Our subsidiary awareness of tools can be regarded as the act of making them form a part of our own body. The way we use a hammer or a blind man uses a stick, shows in fact that in both cases we shift outwards the points at which we make contact with the things that we observe as objects outside ourselves. While we rely on a tool, these are not handled as external objects. We may test the tool for its effectiveness ... but the tool ... can never lie in the field of these operations; it remains necessarily on our side of it, forming part of ourselves, the operating persons. We pour ourselves out into them and assimilate them as parts of our own existence. We accept them existentially by dwelling in them. (1958:59)

A skilled person accomplishes a performance as a coherent entity, without conscious awareness of the constituent elements (or particulars) of the performance. S/he may have learnt to accomplish the task by focussing first on each part of the task but in skilled performance particulars are no longer observed in themselves. What is in focal awareness is a forward projection of a comprehensive activity (text in context) to be achieved. The subordination of particulars in a particular arrangement constitutes a particular *focal awareness* - so even though all the particulars may be explicitly specifiable, the relationship of particulars jointly forming a whole may not be articulable.

In Polanyi's argument habituation through repetition is not a 'mindless' activity - it brings about 'a structural change achieved by a repeated mental effort aiming at the instrumentalisation of certain things and actions in the service of some purpose' (1958: 62), so that what we know resides in us as an embodied practice rather than as an articulated knowing of external objects.

According to Ainley, 'the most skilled are those having complete knowledge of an entire process and the ability to use understanding of working in one area to comprehend what is happening in another' (1993:8). A structural classification such as the one made by Ryle (1941; in Wackerhausen, 1996) between knowledge as *know that* and knowledge as *know how*, does not capture this version of skill. Ryle's distinction divides knowledge into explicit, propositional knowledge of facts and rules (*know that*), with *know how* defined as more or less automated physiological or quasi-physiological routines. In this structure *know how* is assigned a subordinate status that necessitates some measure of practical training based on *know that*. Tacit knowledge understood as *know how* in the above sense, or as knowledge not yet given a *know that* form, fails to capture the internal principles transmitted through traditional forms of apprenticeship. What is needed is a different classification of knowledge which can capture Pye's 'approximation' and Polanyi's 'ineffable knowledge'. In order to find such a classification we move to a broader view of knowledge and its internal principles.

Knowledge structure in general

It is in Bernstein's later work (1996, 1999) that the structure of knowledge features prominently. He distinguishes between two fundamental discursive forms, namely *horizontal discourse*, which is local, context-dependent and specific, tacit and multi-layered and *vertical discourse* that takes the form of a coherent explicit and systematically principled structure: hierarchically organised as in the natural sciences (what he calls vertical knowledge structures), or taking the form of a series of specialised languages as in the social sciences and humanities (what he calls horizontal knowledge structures).

By doing so Bernstein draws crucial distinctions between the internal structuring of knowledge forms. All 'knowledges' do not have the same form. Rules of distribution regulate their circulation in time and space and the procedures of their legitimisation (1996:172), thereby creating differences in the manner of their transmission and acquisition (or pedagogy). In horizontal discourse knowledge is distributed *segmentally*, with each segment relating to a particular context. Segments bear no necessary relation to other segments as there are no overarching principles which order them. The meaning of one segment is not dependent on the meaning of another segment (e.g. learning to tie one's shoe laces bears no necessary relation to learning to use the telephone). Meaning is wholly dependent on the evoking context and its cultural specifications. Meanings are potentially available to all who have access to the discourse, but their acquisition depends on distributive rules which regulate 'the circulation of knowledge, behaviour and expectations according to status/position' (1999:5).

In vertical discourse knowledge is distributed through a *recontextualising principle*, which organises knowledge in a particular way - through the integration of one level of meaning with another in a hierarchical order; or, as a specialised language with a strong or weak internal grammar (principles or rules of connectivity/combination). 'Competent members [of vertical discourse] can give an explicit account of the way in which they have arrived at a specific position; they can re-trace their steps and show how they have made the recontextualised objects "hang together"' (Muller, 2000:163).

Bernstein positions craft as a modality of vertical discourse, characterised by a horizontal knowledge structure with a weak grammar and tacit transmission. Tacit transmission is one where showing or modelling precedes 'doing' - as opposed to explicit transmission which refers to a pedagogy that makes explicit, or attempts to make explicit, the principles, procedures and texts to be acquired. He places craft as a horizontal knowledge structure 'nearest to horizontal discourse as it emerges as a specialised practice to satisfy the material requirements of its segments.' (1999:26).

In order to appreciate the implications of this classification one must return to the distinction between horizontal and vertical discourse. In horizontal discourse there is no relation of necessity between one segment and the next - there is no particular order of meaning (no recontextualising principle). Each segment of localised activity is embedded in ongoing, contextually-specific practice. No further elaboration is necessary or indeed possible as the meaning is wholly embedded in the context, with no reference outside that context (1996:44). In vertical discourse there is an indirect relation between meanings and a specific material base - the meanings in vertical discourse thus relate two worlds: a material world and an immaterial world. Meanings have a power of relation or ordering that comes from outside a specific object or context because they are not totally consumed by that context. Further elaboration is always possible; more work can be done, inferences can be drawn because there is a forward projection towards an order more 'ideal' than the one at hand.

Craft knowledge is particularly close to horizontal discourse because the end-result of craft produces a material object. The production of such a 'text' must by virtue of its very materiality have a direct relation to a material base. Craft knowledge lies inside vertical discourse because it always produces an 'approximation more or less' towards an idealised conception of the thing to be produced. Uncertainty of end-result always presupposes a possibility of further elaboration. There is thus simultaneously a material relation and a reference to something outside of that object. Like a 'cusp' sign in the Zodiac, craft knowledge yearns in both directions, without quite reaching either horizon.

There is an apparent contradiction inherent in this positioning. If craft knowledge is segmental there is no necessary ordering of the segments; yet there must be a recontextualising principle to make the bits (or segments) hang together, otherwise no further elaboration is possible. A closer examination of the pedagogy of craft (its transmission-acquisition practices), will show how this seeming contradiction works itself out.

What cabinet makers learn (1)

Institutional training at the 'trade school' of the furniture industry seeks to reproduce cabinet making as a holistic craft practice relating to the construction of loose-standing items of furniture, from their original conception to the production of the finished item. In the middle ages apprenticeships were divided along the same lines as the craft guilds or trade companies - according to the materials that companies had the royal privilege to sell (Clarke, 1999:6). Members of a trade were not allowed to undertake the work of other trades, thereby literally making trade a *material-bound* practice and establishing the means for maintaining skill boundaries. Those boundaries exist to this day even though most core trades have been divided into sub-designations, which have become specialised in restricted form. Cabinet makers may for instance only use seven specialised machines (two kinds of planing, three kinds of sawing and two kinds of sanding machines), so any further elaboration must occur within these boundaries. Cabinet makers are also still trained in the use of hand tools and rely, in the final instance, on their own manual ability to shape and finish of a piece of wood, which is why Pye's 'principle of uncertainty' remains as a subterranean flow.

The formal curriculum in cabinet making apprenticeship is organised in typical modular manner favoured in most VET systems. Modules focus firstly on the characteristics and care of different kinds of wood and then on various kinds of tool usage (e.g. hand tools, pneumatic tools, electric tools); operational procedures (cabinet joints, hand cramping, screws and nails, fixtures and fittings); techniques for the construction of carcasses, doors and drawers, the making and use of jigs and templates; and, at the more advanced level, specialised construction

processes such as veneering, laminating and wood bending, reproduction furniture, repair of furniture and furniture design. The twenty one modules are sequenced in five stages which stretch over a maximum of four years. Apprentices attend at least one 'stage' of two to three weeks of institutional training per year and spend the rest of the time in the workplace. Each stage is preceded with a two- or three-day focus on technical drawings, where they have to reproduce as well as produce three-dimensional drawings, firstly at reduced scale and then to scale, with strong distinctions made between 'light' lines used to construct the drawing and erased later; 'dotted' or hidden lines which are part of the object, but depicts that which cannot be seen; and 'hard' lines that represent what is visible when the item is viewed from an angle of 30 degrees.

The comprehensive scope of the curriculum is only appreciated when one observes the work practices in mass-production factories. Few qualified artisans are employed in these workplaces and those who are, spend most of their time assembling rather than constructing. Apprentices who come from these factories find it unusual and often difficult to have to go through the full cycle of selecting and preparing their own wood, reproducing a design in full-scale lay-out, drawing up a cutting list and routine sheet and then making each piece of the item of furniture separately and finally fitting them all together and finishing off. Unless they work in a 'niche market' craft factory, or will eventually work for themselves, they will never be responsible for the whole process from conception to end-result as it is assessed in the final trade test.

In the final test the cabinet making apprentice has three days in which to interpret and realise a design, according to strict criteria of accuracy. Apprentices work on their own under the watchful eye of an assessor who will only intervene when unsafe practices are in evidence. Assessment criteria are not revealed to those who undergo the test and only those who achieve above 60% are declared competent.

Transmission practices in craft

At first glance the above curriculum is peculiar in its sequencing. While the process of constructing a piece of furniture has a logical sequence which everybody adheres to in a 'more or less' manner, there is no strict sequence or order in the transmission practice. Modules are scheduled to fit into the master trainer's time table and apprentices may miss out on modules and complete them at a later stage. No module is an absolute prerequisite for another. Although, on paper, the content of modules appear to be logically sequenced, this, it appears later, is the logic of the materials designer and not the logic of the master artisan who trains. There is very little formal teaching and what there is seems random and haphazard. The apprentices all start off in the same place, but soon they are doing different things at different speeds and even using different methods. The master moves around between the work benches and watches them all the time, but he does not intervene or correct them. The only time when he will intervene is when their bodily position is wrong. He will take a piece of wood from someone who is, for instance, planing and he will position himself in the apprentice's place and perform the movement. Then he will watch the apprentice doing it and to this extent a direct modelling practice can be observed. The master always has a tape measure in his pocket and every now and then he will lean over and measure a component part. If a measurement is out, he will say so and then move on - he does not give an explanation of what they are doing wrong, nor does he ask them to explain what they are doing and why. The way in which communication occurs is through drawing. Drawings are done on any surface and all the time - they are rough and crude, but not out of proportion. Eventually the apprentices also start to draw and if they want to ask or explain something they will draw rather than speak.

The only 'rules' explicitly conveyed are the rules of social order, mostly in relation to the disciplining of the body. Starting and stopping times, tea and lunch breaks are strictly observed - but with no clock or siren in sight. If apprentices arrive late it is interpreted as a weakness of character ('unreliable', 'lazy', 'slack'); yet, if an apprentice snaps a belt on a band saw the master says nothing - he just walks over to fix it, or he tells them that the particular machine is now out of order until it can be fixed.

As one watches groups of apprentices in the different stages it is easy to spot a change in deportment and stance at the more advanced levels, but how this is conveyed remains a mystery. When asked why a particular apprentice does not seem to be coping, the explanation is invariably that s/he cannot do drawings, although the apprentice may be shaping a table leg or using a cross-cutting saw at the time.

What cabinet makers learn (2)

Transmission practices in cabinet making only start making sense when analysed in relation to the insights of Pye, Polanyi and Bernstein. What is transmitted through apprenticeship is the 'whole process' of cabinet making, albeit loosely organised, with no necessary relation between the segments referring to apparently discrete technical operations. Yet, there is a 'glue' that holds the segments together and this is the ability to visualise the whole through each part, or to see *in* the visible that which is invisible. All drawings project a front view, a top view and a side view of the object. These views are represented separately and in the beginning apprentices study these separately and draw them separately. As they proceed to isometric drawing where they have to represent all three views in one (three-dimensionally) they begin to grasp height, width and depth in the same instant. The skilled artisan looks at an object and simultaneously 'sees' what is there and what is not there. When observing apprentices in the drawing class, one immediately becomes aware of the subordinated presence of the recontextualised discipline of geometry; yet geometry is not the focus of the transmission. The focus is on practical application and the practical application is the ability to 'see' proportion. What is visualised is a three-dimensional spatial arrangement, which no diagramme can fully represent. This comprehension of 'proportion' underlies every choice, decision and action of the skilled artisan, but it is the thing that cannot be taught - it can only be modelled or 'caught'.

In discussing the transmission of topographical anatomy to medical students, Polanyi elucidates the point in a way which is helpful here:

The medical student first learns a list of bones, arteries, nerves and viscera which constitutes systematic anatomy. This is hard on the memory, but mostly presents no difficulty to the understanding, for the characteristic parts of the body can usually be clearly identified by diagrams. The major difficulty in the understanding, and hence in the teaching of anatomy, arises in respect to the intricate three-dimensional network of organs closely packed inside the body, of which no diagram can give an adequate representation. Even dissection, which lays bare a region and its organs by removing the parts overlaying it, does not demonstrate more than one aspect of that region. It is left to the imagination to reconstruct from such experience the three-dimensional picture of the exposed area as it existed in the unopened body, and to explore mentally its connections with adjoining unexposed areas around it and below it ... [Once this topographic understanding is achieved, the medical student] could derive an indefinite amount of further and new significant information from his understanding, just as one reads itineraries from a map. Such processes of inference, which may involve sustained efforts of intelligence, are ineffable thoughts (1958:88-89)

If we return to cabinet making we can now explain why it is that the relationship of the particulars or segments which jointly form a whole cannot be imparted, even though each segment, or technical procedure, is explicitly specifiable and can be transmitted and acquired separately. It is subordination of the particulars that constitutes a particular kind of 'focal awareness' (Polanyi's term) that we are calling visualisation. When the capacity to visualise is achieved, the subsidiary knowledge becomes 'instrumentalised' in the body. Technical operations are no longer known in themselves but are known in terms of a material object that is focally known and to the quality of which these operations contribute. If in Bernstein's terms we can speak of a grammar, we need to speak of a tacit grammar rather than about a weak grammar. It is not that the concepts, relations and procedures are more or less explicitly formally articulated, it is that the grammar *cannot* be articulated. When asked in an interview about the propensity to draw everything, an apprentice called drawing his 'third language' (in addition to two spoken languages). While inadequate in its representation, it is only through drawing that the skilled cabinet maker can convey the 'whole' in each of the parts. That 'whole' is not dependent on an integration of the segments but on a subordination of the segments as a subsidiary configuration. The relation between subsidiary 'segments' cannot be explicated, yet it is exactly this relation that brings about the ability to visualise - as a kind of non-articulate compensation for the lack of a clear recontextualising principle.

Conclusion

The nature and form of craft knowledge, as observed in the transmission practices of cabinet making, has implications for our understanding of the processes of apprenticeship, as well as for the VET curriculum in general. As long as discrete technical operations remain objects of focal awareness in themselves, they cannot be submerg'd as 'extensions of the body' to constitute the subsidiary awareness on which skilled performance rests. Once they are submerg'd they become unconscious and can no longer be talked about. The inverse is that

as soon as we become aware of a particular operation or procedure and it pops back into focal awareness, it is no longer subsidiary. It becomes the object of our attention, it becomes the 'whole' and we can talk about it, but the ability to project forward towards the ideal conception is lost. Polanyi's 'art of doing' is then lost and manual work becomes a set of technical 'know how' procedures - a far cry from the way in which Bernstein describes craft as 'the imaginative translation of function into appropriate forms' (in email communication with Joe Muller, 13 March 2000).

Modelling of the invisible is what happens in craft apprenticeship. It is the purpose of the asymmetrical relationship between master and apprentice as it is through following the master that disciplining of the body, which leads to ineffable skill, is transmitted. This view of apprenticeship questions the argument put forward by Lave and Wenger that 'to take a decentered view of master-apprentice relations leads to an understanding that mastery resides not in the master but in the organization of the community of practice of which the master is a part' (1991:94). It also disagrees that 'once you are a member of the group, once your behaviours count as meaningful within the social practice, you get the "meanings" free' (Gee, 1992:10 quoted in Ainley and Rainbird, 1999:5). In craft the meanings do not come for free. The master holds the craft in her/his body and the apprentice has no free access to this knowledge by virtue of being part of a group. Craft workers have for too long jealously guarded the mysteries of their worlds - both economically and socially.

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THE NEW CAPITALISM: WHAT'S NEW?

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Introduction

The global "new capitalism" is the topic of a large amount of academic and popular writing (for the best of which see, Castells, 1996, and the following volumes in his series of books devoted to the new capitalism). At the same time, it is a contentious issue as to what exactly is "new" in the new capitalism. In this paper, I want to develop one particular perspective on this question. My themes will be these: the waning of "ordinary middle-class" people, the death of commodities, the importance of design and designing, the engineering of identities, affinity groups, and networks, and, finally, the growing dissociation of what we do and how (and how well) we understand it. I will close with some brief remarks on education.

The Old Capitalism

The old capitalism was born in warfare between workers and bosses over *control* (Kanigel, 1997). Workers wanted to control the pace of their work and the details of their employment. In the end, they decidedly lost the battle, but conflict did not end there. It shifted to a fight over the distribution of wealth (Smith, 1999). By the waning days of the old capitalism, thanks to the power of unions and the success of the post-World War II economy, the vast majority of workers in the United States viewed themselves as "middle class" people.

The old capitalism, at least in the United States, is ideologically associated with a certain sort of "middle class" identity, what I will call the identity of an "ordinary person" (it was if people could be "standardized" in the way in which commodities were standardized). This created a solidarity that effaced the workings of class and it stigmatized those people who could or did not look or act like (prototypes of) "ordinary" people.

The New Capitalism

In the new capitalism, this notion of "ordinariness" and "standard people" is dying. It is being replaced by a stress on *difference* and *multiple identities*. This change is due, in part, to the *death of commodities* (Rifkin, 2000; Thurow, 1999) What had allowed a relatively peaceful "stand off" between workers and managers in the old capitalism was the great success of the old capitalism in producing commodities. Commodities are standardized products that become inexpensive enough to be widely available.

Changes in science and technology eventually allowed modern conditions of work and the mass production of commodities to be carried out successfully in a great variety of countries, even in some so-called "developing countries". The result was (and is) a global over-production of commodities and hyper-competition for consumers and markets across the globe (Greider, 1997). The production of commodities, which, of course, continues and will continue across the globe, becomes a backgrounded part of the new economy, one that, in general, cannot reap great profits (unless one is first into a market with a new commodity).

There is another result, as well: many workers cease to be "middle class". The new industrial worker, and the many other sorts of non-middle class workers to which the new capitalism gives rise to, especially temp and service workers, can no longer afford to live in the sorts of communities, or to live with the degree of stability and security, that made workers in the old capitalism feel securely middle class.

It is not just workers in the new capitalism who have lost their secure relationship to the middle class. All wage earners, including managers, are threatened in this respect, as well. Businesses of all sorts, including the remaining producers of commodities, operate with flatter hierarchies, that is, with fewer middle managers and with workers who think and decide for themselves. It is much more efficient to organize front-line workers into teams that organize, direct, and transform their own work processes (and supervise each other) than to have hoards of middle managers run things, people who are, after all, not close to the actual work.

Security in the new capitalism is not rooted--as it was in the old capitalism--in having a job and wage. In the new capitalism work is more and more *project based* (Smith, 1995). A team comes together to carry out a project and when the project changes or is over, the team reassembles and many of its members move on to other projects in the same business or other ones. Security in the new capitalism, such as it is, is rooted not in jobs and wages, but

in what I will call one's "*portfolio*". By one's portfolio I mean the skills, achievements, and previous experiences that a person owns and that he or she can arrange and rearrange (in terms of a literal or metaphorical portfolio) to sell him or herself for new opportunities in changed times. I have argued elsewhere that the new capitalism is giving rise to a new "kind of person": a *shape-shifting portfolio person* (Gee, 1999). Certain sorts of students are learning to be such people from their early socialization at home and in school. Many sorts of workers, high and low, are being forced to become such people.

Design

So if commodities don't bring great profit in the new capitalism, what does? The answer, I believe, is *design* (New London Group, 1996). There are three types of design that reap large rewards in the new capitalism: the ability to design *identities*, *affinity groups*, and *networks*. These three types are all deeply inter-related. We can start with "identities" and get to the other two notions.

One type of design is the ability to design products or services so that they create or take advantage of a specific identity connected to specific sorts of consumers (and one and the same individual might constitute several different types of consumer). In turn, the business seeks through this identity to contract an ongoing relationship with the consumer in terms of which he or she can be sold ever newer variations on products and services (Rifkin, 2000). The product or service itself is not the important element here. After all, many products (as commodities) are getting cheaper and cheaper to make (as the cost of materials--and most especially computer chips--gets lower and lower) and many services don't involve any material things at all. What is important is the identity and relationship that are associated with the product or service.

What is important, as well, are the affiliations that people get when they see themselves as sharing a set of related identities and relationships. These affiliations create what I call "*affinity groups*" and these are replacing, in many respects, the class system (however effaced it was) of the old capitalism. Greens, Saturn owners, members of an elite guarded-gate community, users of Amazon.com, skate boarders, or Pokemon fanatics constitute affinity groups that share practices, patterns of consumption, and ongoing relationships to specific businesses and organizations (Beck, Giddens, & Lash, 1994).

Another type of design is the ability to design identities for people who participate in workplaces or other type of organization. Here the key idea is to create bonding between people, based not on a generic identity as "worker" or in terms of shared cultures (or genders or ethnicities) that may come into conflict with the organization's goals and values, but in terms of allegiance to and participation in a shared set of practices. The workplace or organization is designed as an intersecting set of "*communities of practice*", where a "community of practice" is a particular type of affinity group (Wenger, 1998).

In a community of practice people affiliate with one another not primarily in terms of shared culture, gender, or ethnicity, but in terms of a common endeavor and the practices through which this endeavor is carried out. Outside the endeavor and the practices, the members of the community of practice may be people who share little in the way of interests and values. But in terms of the common endeavor and practices, they share embodied ways of seeing, acting, and interacting that make them fit together as a coordinated group.

In a community of practice, knowledge is not stored all in one person's head, but, rather, it is distributed across group members and their technological tools. This means that individual workers cannot walk off the job taking crucial knowledge with them. It means, as well, that new workers can be trained ("apprenticed") by participating in the practices that define the community of practice. This is important in a new capitalist world in which knowledge-in-and-on-practice is a crucial "value added". It is important, as well, because change happens so rapidly that rules and procedures of work, which are always being transformed by the work group in its adaptation to change and competition, are best left to training "on the job".

Another crucial aspect of design is *networking* people and technologies within and across affinity groups or communities of practice (Kelly, 1998). Networking involves designing communicational links between people and organizations. It also crucially involves creating links between people and various sorts of tools and technologies. These tools and technologies not only help create the communicational links that constitute networks, they are themselves nodes in the network in which knowledge is stored and across which (together with people's minds) it is distributed.

In fast changing times and markets, the more nodes to which one is connected, the more information one receives and the faster one can adapt and change. Thus, today, businesses create (or leverage) consumer identities and affinity groups and then network them to other businesses and other such groups. Businesses network their suppliers and consumers with themselves. Businesses also network their different internal communities of practice and they network their specific communities of practices with other similar communities of practice in other businesses and institutions. Networks are not crucial to businesses alone. Individuals—who are encouraged to think of themselves as businesses on their own, selling their own unique portfolio of achievements, skills, and experiences—network themselves to other individuals and organizations across the country and the world.

Networks harness the power of *unfamiliarity*. If people or organizations are networked only with people or organizations like themselves, then everyone in the network pretty much knows what everyone else knows and there is nothing very new to be learned. In slow changing times, this is fine—maybe even good—since a common core of knowledge can be ever refined. On the other hand, if people or organizations are networked with diverse others, then they are going to learn and keep learning new things, things not already in their own repertoire of knowledge and skills. In a fast changing world, the power of network links to unfamiliar people and organizations is crucial.

Networks that leverage the power of unfamiliarity often have to be large and diffuse, and many of the links are relatively weak links, unlike the strong bonds that people tend to have with those with whom they are familiar and with whom they share a good deal. We come, more and more, to live in a world of many weak links, rather than a few strong ones. This is aided and abetted by the increased *mobility* of new capitalist shape-shifting portfolio people, who move, either physically or virtually, from place to place, creating multiple diffuse weak links to other people and organizations (Bauman, 1998). In fact, in the new capitalist world, mobility is a form and source of power. The mobile classes often leave it to the locals (people who cannot get out or who have few links beyond their area) to clean up (or live with) the messes they have left behind.

A heavily networked world has one large drawback. Each person and organization gets bombarded with so much information that *attention* is overloaded. This is why, in the new capitalism, gaining and holding attention (for a while) is an absolutely essential resource. A business that, even if it loses money on a product or service, can gain and hold attention has a valuable resource that it can then sell to other businesses. In the old capitalism, materials and "natural resources" were key resources over which businesses fought economic wars and countries sometimes fought military wars. In the new capitalism, attention is a key resource over which economic wars, at least, are being and will be fought.

Opacity

A key feature of our "new times" is what I will call "*opacity*". By opacity, I mean that, more and more today the connection between the practices in which one engages and their meaning is opaque or obscure. Practice and meaning become more and more deeply dissociated. Let me give one humorous, but telling example. I recently heard a talk about transformed work practices at a not-for-profit organization that serves elderly and dying people. This organization used to be called "The Center for Peace for the Elderly and Terminally Ill". Today, it is called "Bright Water". Under the former name, the connection between practice and meaning was brutally clear. Under the latter name, the connection is opaque.

There are three things that give rise to opacity in contemporary workplaces and organizations: *design*, *speculation*, and *risk*. Let me take each in turn, starting with the role of design, especially designing relationships within workplaces and organizations.

Frederick Winslow Taylor was a (in many respects, the) key figure in the creation of the old capitalism. Industrial capitalism started as a crude form of exploitation of workers, many of whom had just moved from agricultural settings to cities (Drucker, 1999; Kanigel, 1997). Force and arbitrary sanctions were commonplace forms of worker control in early factories. Taylor came, by his own account, to humanize industrial work and relations.

The industrial system, with its large factories, had replaced a craft system in which skilled work traditionally was performed at a rather leisurely pace or in spurts of great intensity at the discretion of the individual worker. Taylor came, also, to greatly speed work up and to take decisions out of the hands and minds of workers.

Taylor broke each work practice into its basic bits and pieces and determined the fastest and most efficient way these bits and pieces could be combined. In turn, he argued that workers ought to be rewarded for how fast and efficient (and, thus, productive) they were. Taylor saw his workplace rules and principles as scientific and he sought to replace the dictates of bosses or the demands of unions with the "neutral" arbitration of such "rational" rules and principles. In the end, Taylor argued, everyone would benefit as more wealth would be produced and distributed (albeit unevenly) across bosses, managers, and workers (hence, the pervasive "middle classness" in the old U.S. system).

Whatever one thinks of Taylor and "Taylorism", one thing is certain: in Taylorist workplaces, the rules of the game were clear. There was little opacity between practice and meaning. Not so today. In the new capitalism, designers sociotechnically engineer work and other organizational practices as communities of practice. Such communities of practice are often designed to encourage people to fully commit themselves, feel empowered, design and redesign their own work practices, supervise each other in teams, leverage their growing tacit knowledge of best practice for the good of the company, gain ever new skills, and be "eager to stay and ready to leave" as projects or markets change.

These designs always leave it quite unclear whose interests are being served, when, and where. Is the worker now a true partner, even a boss? Or is the worker being manipulated in high-tech ways to do the organization's bidding, fully committed to the values and goals of an organization that he or she really does not get to determine, critique, or even fully understand (because, for instance, there is often one statement of goals and values for the worker and another for the investor)? Often, there is no clear answer.

A second source of opacity is *speculation*. The new capitalism looks as if it is and must be committed to consumers (with whom it wants close relationships) and workers (whom it needs to empower for commitment). But appearances are misleading here. The core value of the new capitalism is that a business must make the maximum possible profit for its stockholders. Otherwise, these stockholders (many of them large mutual funds) will simply invest in another company. Things are yet worse: investors expect the greatest possible return in the shortest amount of time, or they switch investments. This means businesses often engage in policies that benefit investors in the short run, but hurt the company, its workers, and even its consumers (e.g., witness United Airlines) in the long run.

There were those who argued, at the outset of the new capitalism, that it should be a "stakeholder capitalism", that is, a capitalism in which all people with a stake in a company ought to benefit (that is, bosses, managers, workers, consumers, the local region, and society at large). But this is not how things have turned out. Stockholder capitalism ensures that people furthest from the actual work benefit most, even as those closest to the actual work are asked to design and transform their own work practices and commit themselves heart and soul to the business. Stockholder capitalism means, as well, that what a company actually produces is less important than the company's value in the market as something that can be speculated on.

For my purposes here, what is most important about stockholder capitalism is that it means that all of us, as "players" in the game (unless we are primarily investors), turn out to be "speculative prey". That is, whether we be high or low-level workers in the system, much of what happens to us turns out not to be directly in our control, but to flow from speculations made by investors in stocks (and other financial interests and instruments that affect stocks and the fate of particular types of businesses). Speculation adds an enormous amount of opacity to the meaning and predicted effects of what we do and see.

A third source of opacity in our "new times" is *risk* (Beck, Giddens, & Lask, 1994). As workplaces become more and more highly designed, as consumers, workers, and organizations become more and more networked, and as science and technology become more and more essential to creating, sustaining, and participating in these networks, complexity exponentially increases. We come to live in a "risk society". Systems grow so complex that they have emergent properties--sometimes good, often bad, sometimes disastrous--that no one can control or predict.

In turn, more and more effort is put into attempts to control complexity and risk, most of which simply creates more complexity and risk by adding yet more variables to the networks and inter-linked systems. Understanding systems and connections among systems, and understanding one's place in systems and how small effects can ramify through a system to become large outcomes, have become crucial skills in our "new times". Ironically, the unpredictable life of the peasant in medieval society--whose life often suffered at the ever changing whims of kings and lords--becomes the fate of all of us, though the rich (and their numbers are growing in the new

capitalism) characteristically attempt to use their resources to protect themselves from such a fate and off-load it to the poor (whose numbers are also growing in the new capitalism).

In the end, then, I am arguing that there is a triple dissociation between practices and meaning (or how we can understand those practices). Between the practices and our interpretation of them stands three factors that make that interpretation risky: overt design, speculation, and risk, none of which are (or, at least, need be) directly or transparently related to the contents of the practices themselves.

Transition

Let me just briefly note here that I do not think that the "new capitalism" as I have written about it here and elsewhere (e.g., Gee, Hull, & Lankshear, 1996) is a stable formation. In fact, I think it is a transitional form. I believe that something yet newer is beginning to emerge (e.g., see Fukuyama, 1999; Howe & Strauss, 2000). This new social formation will retain many of the features I have discussed here, but will have new features, as well. It will have the potential to become a longer-lasting more stable (but, of course, not ever-lasting) formation of the sort that the old capitalism represented. There are many features of this new formation I could discuss, but let me just mention a very few.

The new formation (these are, of course, just guesses) will re-stress conformity and commonality, downplaying the role of difference and cultural fragmentation. It will retain a stress on multiple niches and identities, not defined by culture, but, rather, by distinctive practices, consumption patterns, and affinity groups. It will retain and accept as natural and normal large disparities in wealth, a weaker and smaller middle class, and the segregation of the wealthy from the less wealthy, but within a system that stresses order, civility, basic (but only basic) rights (even for the poor), and the acceptance of authority. The new formation will stress particularly the rights and needs of children and the imperative of seeing to it that they grow up to create civic order (e.g., low crime and little disruption) and accept the new formation in an uncynical way.

This formation will be seen as a restoration or order after a period of transitional disruption represented by the "new times" of the 1960's to about 1990. In many respects the new formation will represent the normalization of the new capitalist world, but a normalization wherein resistance, cynicism, critique, and hyper-individuality will play a much smaller role. It will represent a new hegemonic formation centered not on "ordinary people" and "middle-classness", but on the interests, values, and new (though patronizing) civic-mindedness of a relatively small group of quite wealthy people with distinctive identities, lifestyles, and locations in social and physical space.

Education

What is striking about schools today, especially amidst the standards and testing regime, is how ill-suited many public school are to producing students who will be able to understand and survive in the new capitalist world we have been discussing. Of course, this is much less true of many elite private schools and public schools in wealthy suburbs in the United States. Many schools today stress skill-and-drill and basic skills, over conceptual understandings, at least for the less wealthy students (this may quite well be seen as part of the new social formation I discussed above).

If schools were to equip students for our "new times", they would stress many of the themes I have stressed here. Students would come to understand how identities are formed and transformed, and how they can be manipulated by and for institutions. They would come to understand how to work collaboratively on projects in communities of practice wherein knowledge is distributed across people, tools, and technologies. They would come to understand what are the potentials and perils of being (or not being) a shape-shifting portfolio person and being (or not being) virtually and/or physically mobile. They would know how to design and critique design in multiple areas and at multiple levels. They would come to understand, in a critical way, the workings of affinity groups, networks, and systems, as well as complexity and risk, in the contemporary world.

In the end, they would become adept and critical social geographers of the identities, institutions, systems, and discourses that inter-connect locally, regionally, and globally in the world. They would be prepared to understand the workings of hegemony in old and new social formations alike. For the "peasants" among them (us), this would all be a matter of survival. For all students, it would be a matter of forestalling a world in which an hour-glass structure of large numbers of rich at the top and poor people at the bottom, mediated by a small number of people in the middle, collapses catastrophically on itself.

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CONCEPTIONS OF LEARNING

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The standard paradigm of learning (Theory I)

The term 'learning' is used commonly in very diverse ways, perhaps reflecting widespread recognition that there are many different sorts of learning. The vagueness and ambiguity of the term 'learning' is multiplied by the fact that it is commonly employed in both a *task* sense and an *achievement* sense.¹ Learning in the task sense refers to trying or attempting to learn. This first sense puts the focus on the *process* of learning. Learning in the achievement sense refers to successful learning. This second sense puts the focus on the *product* or *outcome* of learning. Processes of learning are many and varied. For example some involve teaching, but many do not. Some involve bitter experience, others can be joyful. Likewise, products of learning are many and varied, including examples as diverse as knowledge, know how, competence, skills, values and norms.

Nevertheless, despite this diversity of both process and product, educational thought has been dominated by a largely unquestioned assumption that the most valuable learning is of one particular kind. Thus other forms of learning have been evaluated by how well they approximate to this favoured form of learning. I call this favoured form of learning the Standard Paradigm of Learning (or Theory I).

Major assumptions that give Theory I its distinctive character include:

1. *Learners as isolated individual minds*

For Theory I the basic image for understanding learning is that of an individual human mind steadily being stocked with ideas. The focus of learning as a process is on circumstances that favour the acquisition of ideas by minds. The focus of learning as a product is on the stock of accumulated ideas that constitute a well-furnished mind, the structure of those ideas, how various ideas relate to one another, and so on. In emphasising learning by minds as the most valuable form of learning, Theory I shows its allegiance to mind/body dualistic understandings of human beings as inherited from classical Greek thought and from Descartes. The effect of elevating mind over body as the centre of the most valuable kind of learning is to make learning an essentially solitary process, an individualistic even narcissistic process, where the learner becomes a spectator aloof from the world.

2. *The essential interiority of all mental events and activities*

As Toulmin (1999, p. 56) puts it, Theory I assumes that ".... the supposed *interiority* of mental life is an inescapable feature of the natural processes in our brain and central nervous system". On this view, human sense organs are instruments that can add content to mental life, but are themselves part of the 'outer' world of the body, not of the 'inner' mental world. So the most valuable form of learning is focused on thinking (what minds do), rather than action in the world (what bodies do) (Winch 1998, p. 63).

So far the contents of minds have been characterised by the vague term 'ideas'. Major examples are concepts and propositions as objects of thought. For Theory I, meanings of concepts are established via the activity of individual minds. Concepts in turn are combined in propositions that represent things and states of affairs in the world (Winch 1998, p. 63ff). So the individual solitary mind becomes a spectator that is not itself in the world, but is able to represent the world to itself via propositions. Since this mind is in effect in a different world, the same is so for the propositions. Thus we get the notion of propositions as timeless universal entities.

Likewise, learning is a change in the contents of an individual mind, i.e. a change in beliefs. Knowledge is viewed as a particular kind of belief, viz. justified true belief. Since belief is a mental state or property, learning is a change of property of a person (mind). So to have acquired particular learning is for the mind to have the right properties. But properties, like propositions have been regarded as universals, i.e. the same in each instance. Hence we link to the notion of knowledge as universal, true propositions, the traditional focus of education according to Theory I. So quite a lot follows from the essential interiority of mental events.

3. *The transparency of learning*

As Winch points out:

¹ See, e.g., Winch (1998, p. 1). A similar ambiguity applies to the term 'teaching' (Passmore 1980, p. 20).

It is natural for us to talk about learning as if we recognise that we have both a capacity to learn and a capacity to bring to mind what has been learned. (1998) p. 19)

This second capacity trades on the image of the mind as the home of clear and distinct ideas. If we have really learnt well, we will be able to bring the learning to mind. An inability to do so is a clear indicator that learning has been imperfect or unsuccessful. This also implies that for Theory I non-transparent learning is either an aberration or a second rate kind of learning, e.g. tacit knowledge, informal learning, etc.

The main implications of Theory I can be summarised as follows:

- the best learning resides in individual minds not bodies;
- the best learning is propositional (true, false; more certain, less certain);
- the best learning can be expressed verbally and written down in books, etc.;
- the acquisition of the best learning alters minds not bodies;
- such learning can be applied via bodies to alter the external world.

Influences of Theory I

These implications of Theory I have strongly influenced academic processes concerning selection of learners, what is learnt, how it is learnt, and how learning is demonstrated. The following are typical in educational systems:

- Selection of Students: admission criteria based overwhelmingly on individual performance on written tests of propositional knowledge, and which, in effect, test the individual's mental capacity.
- Selection of Curriculum: course content overwhelmingly propositional knowledge logically ordered via disciplines and subjects. Any non-propositional learning, such as laboratory skills, is driven by the propositional, i.e. to gain valid raw data that can be turned into true propositions.
- Selection of Teaching Methods: major focus is on presentation of verbal and written propositions for individual student acquisition and understanding. Hence the use of lectures, tutorials and textbooks.
- Selection of Assessment/Progression Methods: learning is demonstrated by individuals reproducing verbal or written propositions in appropriate combinations in response to set questions in examinations and written assignments. There is a focus on universal, context free knowledge, with numbers and grading to quantify the amount of learning demonstrated.

Very clearly, these academic control processes are shaped by a particular paradigm of learning (Theory I), and have not been without their criticisms. These have included: their excessive individualism; their devaluation of non-propositional learning; and their focus on intellectual understanding to the neglect of its application.

Problems for Theory I

There are many difficulties that have been attributed to Theory I. Some of the main ones are:

1. Its assumption that the most valuable learning is of this particular kind sets up dichotomies and hierarchies that in turn have created intractable problems of their own. An example is the theory/practice account of workplace performance/practice. If the most valuable learning resides in minds that are essentially passive spectators, then this must be the starting point for understanding performances of all kinds that are significantly cognitive. Hence the claim that such performances are somehow applications of the valuable learning that derives from spectator minds. As long ago as 1949 Ryle pointed out the futility of this view which effectively seeks to reduce practice to theory. However, such theory/practice accounts of performance remain common today, though they are increasingly seen to be implausible. These increasing doubts have been fuelled by research on expertise and the rise of the knowledge society, both of which emphasise the creation of valuable knowledge during the performance of work, i.e. not all valuable knowledge is the domain of the passive spectator. This has been accompanied by increasing breakdown of the front-end model of occupational preparation.
2. It offers no "convincing account of the relationship between 'knowledge' as the possession of individuals and 'knowledge' as the collective property of communities of 'knowers'..." (Toulmin 1999, p. 54).

Likewise the assumption that meaning is established via individual minds creates problem of accounting for collective knowledge (Toulmin 1999, p. 55). Overall the problems discussed in both 1. and 2. can be traced to what Toulmin dubs the "inner-outer problem" (1999, p. 57).

3. Its assumption that the most valuable learning is transparent has been challenged. For example, Winch (1998, p. 19) argues that knowledge is largely dispositional in Rylean terms, thereby taking the central focus away from transparent propositions in minds. Likewise, there is the claim, taken up later in this paper, that abilities or capacities are presupposed by other forms of learning (Passmore 1980, Winch 1998, p. 18).

The emerging paradigm of learning (Theory II)

However there has been another significant view of learning that characterises it as action in the world. On this view (Theory II), learning changes both learners and their environment. Since learners are part of that environment, the basic formulation of Theory II is that the outcome of learning is to change the world in some way. Rather than being simply a change in the properties of the learner (Theory I), the Theory II outcome of learning is the creation of new set of relations in an environment. This is why learning is inherently contextual, since what it does is to continually alter the context in which it occurs.

Theory II is an emerging paradigm of learning because, though a diverse range of critical writings on education can be seen as pointing to this new paradigm, it is still a long way from gaining the wide recognition and support characteristic of an established paradigm. Several educational ideas that point the way to Theory II will now be discussed briefly. Along the way, major features of Theory II will emerge. The ideas to be discussed are:

1. Dewey's contribution
2. The role of action in learning.
3. Insights from Wittgenstein.
4. The capacities presupposed by learning.

1. DEWEY'S CONTRIBUTION

Dewey was a noted critic of dualisms, such as the mind/body dualism, and of spectator theories of knowledge. For Dewey, learning and knowledge were closely linked to successful action in the world. While Dewey did not deny that concepts and propositions were important, he subsumed them into a wider capacity called judgment which incorporates, along with the cognitive, ethical, aesthetic, conative and other factors that are omitted from the essentially cognitive Theory I. Some idea of the scope and significance of Deweyan judgment can be gleaned from the following quotation:

Dewey's view also differs from mainstream theories of logic in terms of what it is that judgment accomplishes. It is a commonly held view that the point of judgment is to make a difference in the mental states or attitudes of the judging subject. But Dewey thought that this view yields too much to subjectivism. According to his own view, the point of a judgment is to make a difference in the existential conditions which gave rise to the inquiry of which the final judgment is the termination. Changes in wider existential situations may involve alterations of mental states and attitudes, to be sure, since mental states and attitudes are also existential. But to ignore the wider existential situation and to focus exclusively on mental states and attitudes is to open the door to the prospect of pure fantasy.

(Hickman 1998, pp. 179-80)

Note that Dewey is not totally discarding the explanatory items of Theory I. Rather they are part of his larger explanatory scheme. Thus, for him, Theory I is best seen as a limited and special instance of Theory II.

2. THE ROLE OF ACTION IN LEARNING

Here is a standard definition of 'learning': The acquisition of a form of knowledge or ability through the use of experience (Hamlyn in Honderich 1998). At first sight this suggests learning is an active process, as the 'use of experience' implies. However the Theory I passive spectator can be seen as using experience in order to furnish the mind, so it seems that activity in the usual sense may not be required by this definition.

Someone who has something stronger in mind is Jarvis (1992) who argues that "learning is intimately bound up with action" (p. 85). He views learning as a "process of thinking and acting and drawing a conclusion" (p. 84). He

suggests it occurs when presumptive (almost instinctive) action is not possible. Thus, for Jarvis (as for Theory II), the norm is for learning to involve an action component. Learning that lacks this action component, such as contemplative learning, is abnormal learning - "the other learning processes involve a relevant and important action component" (p. 85). So Jarvis upends Theory I that privileges contemplative learning at the expense of all other kinds of learning. He holds Theory I responsible for the phenomenon of people rejecting as learning what does not fit under its assumptions (the 'denial of learning' syndrome) (Jarvis 1992, p.5)

As noted earlier, one implication of Theory I was a sharp separation of the processes and products of learning. This distinction is plausible whenever learning is separated from action. However, when learning is closely linked with action, the two are not sharply distinguished at all. The process facilitates the product which at the same time enhances further processes and so on. Further critique of the rigid separation of process and product is found in the work of Wittgenstein which is considered next.

3. INSIGHTS FROM WITTGENSTEIN

As expounded in detail by Williams (1994), the following insights into learning are central to Wittgenstein's later philosophy. They are also highly relevant to Theory II:

- The basic case of teaching (training) is not about mentalistic concepts being connected to objects (as in ostensive definition and rule following). Rather, it is about being trained into pattern-governed behaviours, i.e. learning to behave in ways that mimic activities licensed by practice or custom, "learning to act on a stage set by others".
- Genuinely normative practices (i.e. ones not causally necessitated, but structured by, and admitting of evaluation by reference to a standard, norm, or rule) are social. A period of training or learning is necessary to become a practitioner.
- All use of concepts presupposes a background technique for using the concept, a technique that cannot be expressed as a set of concepts or rules. So the concept (rule) is not foundational of all else. Technique not reducible to concept (theory not reducible to practice).
- Training in techniques creates the regularities of behaviour necessary for any judgement of sameness, in this way the process of learning is constitutive of what is learned. So judgement of sameness not based on a mental state.

It follows from the above that meaning not established internally by individual minds, rather meaning emerges from collective "forms of life" (Toulmin 1999, p. 55). As Toulmin (1999, p. 58) argues:

All *meanings* are created in the public domain in the context of *collective* situations and activities.

Toulmin adds that, of course, once meanings are created in this way, they can be internalised by individuals. But the point is that, contra Theory I, meanings are not essentially internal. He refers to Vygotsky's work in illustration of this (Toulmin 1999, p. 58). Two key points follow from this:

1. There are various kinds and cases of internalisation,

Far from being a single clear-cut procedure, internalisation therefore embodies a *family* of techniques that make mental life and activity more efficacious in a number of very different ways.

Toulmin (1999, p. 59)

2. Learning begins with interaction in the public domain, i.e. some form of action is basic to learning with internalisation of the learning coming later.

Once again, Theory II is not totally discarding the explanatory items of Theory I. Rather they are part of a larger explanatory scheme. Thus, once again, Theory I is best seen as a limited and special instance of Theory II.

4. THE CAPACITIES PRESUPPOSED BY LEARNING

According to Passmore (1980, p. 37) capacities are a major, perhaps the major, class of human learning. For Passmore in normal cases ".... every human being acquires a number of capacities for action whether as a result of experience, of imitation or of deliberate teaching....". Examples that he gives are: learning to- walk, run, speak, feed and clothe oneself; in literate societies, learning to- read, write, add; particular individuals learn to- drive a car, play the piano, repair diesel engines, titrate, dissect, etc.

However, not all human learning consists in capacities, according to Passmore. He gives as examples (p. 37) development of tastes (e.g. for poetry), formation of habits (e.g. of quoting accurately), development of interests (e.g. in mathematics), acquiring information (not itself a capacity?). However, Passmore has each of these

depending on capacities: to understand the language; to copy a sentence; to solve mathematical problems; to listen, read and observe. So the argument is that capacities are basic for other kinds of learning. That is the mental enrichment seen as basic in Theory I actually depends on the exercise of learned capacities.

That capacities are much more than mental in their scope is evident from their definition and characteristics (Honderich 1998):

"capacity" - A capacity is a power or ability (either natural or acquired) of a thing or person, and as such one of its real (because causally effective) properties".

The entry goes on to describe natural capacities of inanimate objects, such as the capacity of copper to conduct electricity. These are dispositional properties whose ascription entails the truth of corresponding subjunctive conditionals. But the capacities of persons, the exercise of which is subject to their voluntary control, such as a person's capacity to speak English, do not sustain such a pattern of entailments and are consequently not strictly dispositions. Thus capacities are vital features of human learning.

Passmore goes on (1980, p. 40) to distinguish two types of capacities - open and closed. He characterises them as follows:

Closed capacities: "A 'closed' capacity is distinguished from an 'open' capacity in virtue of the fact that it allows of total mastery." Examples include playing draughts, starting a car, etc.

Open capacities: "In contrast, however good we are at exercising an 'open' capacity, somebody else - or ourselves at some other time - could do it better", e.g. playing the piano.

As Passmore's range of examples of capacities, e.g. titrating, dissecting, healing, etc., makes clear, their exercise often closely connects with the kind of judgment emphasised by Dewey.

From this brief survey, we can suggest that Theory II, which is proposed as a replacement for Theory I, has the following main implications:

- knowledge, as integrated in judgements, is a capacity for successful acting in and on the world;
- the choice of how to act in and on the world comes from the exercise of judgement;
- knowledge resides in individuals, teams and organisations;
- knowledge includes not just propositional understanding, but cognitive, conative and affective capacities as well as other abilities and learned capacities such as bodily know-how, skills of all kinds, and so on. All of these are components conceivably involved in making and acting upon judgements;
- not all knowledge can be or has been expressed verbally and written down;
- acquisition of knowledge alters both the learner and the world (since the learner is part of the world).

These features of Theory II can be further clarified by expounding the general thinking on which the paradigm is based. It has a holistic, integrative emphasis that aims to avoid dualisms such as mind/ body, theory/practice, thought/action, pure/applied, education/training, intrinsic/instrumental, internal/external, learner/world, knowing that/ knowing how, process/product, and so on. The argument is that judgements, as both reasoning and acting, incorporate both sides of these ubiquitous dualisms. Thus, this learning paradigm does not reject as such any pole of these dualisms. For instance there is no rejection of propositional knowledge. Rather, propositions are viewed as important sub-components of the mix that underpins judgements—though the range of such propositions extends well beyond the boundaries of disciplinary knowledge. What is rejected is the view that propositions are timeless, independent existents that are the epitome of knowledge. By bringing together the propositional with the doing, Theory II continually judges propositions according to their contribution to the making of judgements. Because the judger is immersed in the world, so are propositions. So they lose their classical transcendental status. (For more details on judgement see Hager 2000).

Conclusion

Theory II has been proposed as superior to Theory I. However, it needs to be emphasised that rather than the two theories being polar opposites, Theory I is best seen as a limited and special instance of Theory II. However the

role of learning in the contemporary era is so vital that we can no longer allow its understanding to be distorted by mistaking what is merely a limited and special case for the norm.

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THE RECOGNITION OF PRIOR LEARNING (RPL) IN HIGHER EDUCATION: DOING BOUNDARY WORK?

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Introduction

Changing economic, political and socio-cultural conditions provide an increasingly global framing for explorations of contemporary developments in education and training such as the Recognition of Prior Learning (RPL). The rise in global markets, the shift from large-scale manufacturing to services and niche products, rapid developments and diversification in information technology and massive organisational restructuring processes have transformed the environment, nature and experience of *work* (Gee et al 1996; du Gay 1996) and have established new relationships between the economy and education whereby the latter is based increasingly on the requirements of the former. Drawing on Waters' concepts of economic, political and cultural globalisation McIntyre and Solomon analyse the impact of 'narratives of globalisation' on *higher and further education policy and reform*. They illuminate a discursive convergence whereby 'the binary of the academy and the workplace/organisation is problematic and difficult to sustain' (McIntyre & Solomon 1999: 7).

Pedagogically, these processes of change have recast modes of knowledge production, circulation and communication, set new terms for the timing, location and utility of education and forced reconceptions of the meaning of learning (Gibbons et al 1994; Usher & Edwards 1994; Young & Guile 1998). Solomon and McIntyre (1999) view this process as the 'deinstitutionalisation of knowledge', representing a 'radical break with "knowledge codes" that have traditionally prevailed in higher education.

In practical terms, the above changes have been enacted through interventions such as performance outcomes; modularization; pre-packaged open and distance learning opportunities; increased emphasis on professional and vocational practice and the deployment of notions such as the 'reflective practitioner' as curriculum technologies (Schon 1983); methodologies such as problem-based learning; greater and more formalised valuing of learning from experience (as evidenced in RPL); new modes of assessment such as profiling and portfolio development; a range of partnerships between workplaces and the academy; and, the pursuit of 'relevance' and 'flexibility' through the tailoring of learning programmes to individuals' needs.

What we are seeing then is a very wide range of direct and destabilising challenges to traditional academic practices and boundaries. It has been argued that negotiated awards such as work-based learning (WBL) programmes represent an intensification of such challenges because they usher in a new 'politics of curriculum' in which work, academic study and professional practice are integrated through a mix of RPL, formal learning and action research – with the workplace occupying the central position (Crocker et al 1998; McIntyre & Solomon 1999; Usher & Solomon 1999).

These then are broadly the conditions under which RPL has become a discrete and bounded practice that has matured through several 'generations' (Storan 1998). RPL practices can thus be seen from the outset as part of contemporary challenges to academia. Indeed, the present project of boundary reconfiguration in higher education is an incitement to practices such as RPL. However it is a little understood practice.

This paper represents work in progress with regard to doctoral study (Harris 2000a; Harris 2000b). A review of the RPL literature revealed much of it to be advocacy, descriptive or prescriptive. The concept of power is seldom deployed and when it is, it is viewed as a top-down and negative force: there is little discussion of the micro circulations of power within RPL nor of the possibility that RPL itself might be co-implicated in power relations or that power could be exercised differently and the RPL practice/experience improved as a result. The boundaries between knowledge and power are not well addressed. Nor are the ways in which identity positions are constructed for learners and for practitioners within an RPL process.

The concern of this paper then is to find ways to better understand these issues within the growing range of RPL practices, especially as they are developing within WBL programmes and negotiated awards. There is scope for a more discursive approach to RPL, one which 'involves an examination of the exercises of power at work in [the] micro-practices' (Edwards 1998). The notions of 'boundaries' and 'boundary-work' are deployed and an analytic framework for doing boundary-work is presented and put to work. Key aspects of the boundary work of two

types of RPL are then discussed. Thereafter, ideas are presented for ways to extend the above lines of enquiry into empirical work.

An analytic framework for doing boundary work

Boundaries and boundary-work have become widely used to map contemporary social practices (Massey 1994; Edwards 1997; Edwards & Usher 2000). *Boundaries* are structuring metaphors of space and location - 'spaces of enclosure', markers of 'the limits of difference' which 'provide the basis for deciding what is to be included and what is to be excluded' (Edwards et al 1996: 1). They are not static 'things' - they are complex and ambiguous - subject to 'change within boundaries and changes in the boundaries themselves' (Edwards 1997: 98). They are also controversial - usually involving exercises of power - and often translating into social phenomena through divisions of labour, identity creation and through the 'voice' they give to particular social agents and individuals. *Boundary-work* is thus the active, socially constructed process through which boundaries and spaces are continually enacted, inscribed and negotiated.

The analytic framework consists of five inter-related lines of enquiry:

- *What boundaries and where* - the nature of boundaries - their degree of permeability - and where they are placed, marked, erected, differentiated, enacted and so on
E.g. the convergence of the boundaries around the academy and work - where workplaces become 'learning organisations' and the academy becomes 'performative' and 'enterprising'
- *What is in/out* - positionings, placings, displacements, marginalisations
E.g. the foregrounding of (informal) learning at work and the destabilisation of traditional 'knowledge codes' within academia
- *Who or what sets them* and maintains, mediates, manages, controls, polices them i.e. boundary identities and functions (activities, performances, practices)
E.g. the boundary control functions traditionally exerted by academic 'disciplines'
- *Who or what is 'working' the boundaries* - re-enacting, negotiating, crossing, transgressing, blurring, reconfiguring, re/de-differentiating i.e. *shifting* boundary identities and functions
E.g. the role of policy in blurring boundaries between education and work; the discourses of 'flexibility' and 'relevance'; partnerships; practices such as WBL and RPL
- *How they are being 'worked'* - the interplays and elisions between boundary differentiation and de/re-differentiation (Edwards 1997)
E.g. through new hybrid identities and new textual practices (e.g. around quality assurance)

Putting the framework to work in relation to different types of RPL practice

The above framework is now put to work in relation to two different types of RPL practice, which I have called Mode 1 RPL and Mode 2 RPL for reasons that should become clear as the analysis is developed. Mode 1 RPL is likely to occur in more traditional academic contexts whereas Mode 2 RPL increasingly exists within negotiated awards such as WBL programmes. These two types or modes are synthesised from the wide-range of literature reviewed. They do not therefore relate to individual practices or sites of practice. Rather, they are generalised views intended to stimulate further debate around the nature of boundaries and boundary-work. The following table sets the scene by offering a description of these two broad types of RPL practice:

A description of two types of RPL practice

	Mode 1 RPL - e.g. in traditional academia	Mode 2 RPL - e.g. in WBL programmes
Typical RPL process	A short portfolio development course in which humanistic, experiential learning methodologies are used – reflection etc. Learners engaged in largely individualised, <i>retrospective</i>, reflective processes designed to generate evidence of cognitive capacity and a meta-language about learning.	A short course in which learners research and plan an individualised learning programme. Notions of the reflective practitioner deployed? Experiential learning in managerial mode? Learners engaged in a largely <i>prospective</i> exercises designed to generate evidence of research and planning activities and to produce a relevant learning programme deemed to be at HE level.
Location of RPL practice – physically and epistemologically?	Likely to be at a distance from mainstream academia. Discrete. <i>Bolt-on</i>. Difficult for RPL practitioners to have a say in mainstream curricula/formal knowledge.	Integrated into the award. <i>Embedded</i>. Dialogue between prior learning and the new/future learning - an essential part of a negotiated award.
What prior learning is recognised/assessed?	That which matches canonical bodies of knowledge and/or traditional notions of cognitive capacity and level - within a <i>prescribed</i> notion of academic coherence.	That which has the potential to contribute to/inform a learning programme and thence employee and organisational development - within a <i>permissive</i> notion of academic coherence.
How is prior learning recognised/assessed?	Through direct equivalence in relation to course outcomes or curriculum content. Or through a broader notion of equivalence in relation to generic outcomes or level descriptors for example. Criteria are often implicit.	Not assessed through notions of direct equivalence. Placed 'in eschew' - assessed through the ability to plan a coherent and relevant learning programme at HE level.
Who does what and how?	Learners largely responsible for documenting their prior learning in relation to existing academic programmes. Supported by advisers. Academics assess – based largely on academic judgement.	Learners and academic and workplace mentors work together plan the programme. Acceptance of learning programme determined through negotiation. Likely to be explicit criteria governing aspects and elements of a learning programme.

So, what does the analytic framework help us to say about the above descriptions, about the boundaries around, and the boundary work of, RPL?

Mode 1 RPL - in traditional academia

What boundaries and where? What is in/out?

In traditional academia, strong boundaries are placed around all aspects of pedagogic practice – particularly knowledge. Disciplinary knowledge is centrally positioned within this 'space of enclosure'. It is propositional, mode 1 knowledge (Gibbons et al 1994). Mode 1 knowledge refers to knowledge produced by academics and scientists working within discrete disciplines in academic and research-based institutions. Usually it is seen in quite positivistic terms as universal, fixed and objective. This 'inside knowledge' is therefore markedly separated from other forms of knowledge such as everyday, informal knowledge. Most particularly, for a consideration of RPL, experience and learning from experience are not valued commodities in such contexts. In fact, they are seen as largely irrelevant for learning except for the motivation they confer and as a way of illustrating theory (Usher & Johnston 1996). They are clearly located beyond the boundary – what is inside being largely non-negotiable. Such a view of knowledge lends itself to similarly firm boundaries around understandings of learning, the latter tending to be seen in individual and cognitive terms, as largely adaptive to disciplinary norms (at the lower levels) although more investigative and reflexive at higher levels (Usher & Johnston 1996).

Drawing on Bernstein's (1996) concepts, the pedagogic orientation of traditional academia is towards 'introjection' i.e. a concern with developing the inner consciousness of the learner. There is a clearly differentiated boundary between such a pedagogic orientation and 'projection' i.e. pedagogic practices directed outward towards fields of practice or the needs of the market. Introjection pedagogies (which can have liberal, popularist and radical forms) tend to permit high levels of variation and heterogeneity in pedagogy and evaluation e.g. 'evaluation over time' against criteria that are often not explicit, and rely on a shared and tacit ideological basis which allows considerable discretion for teachers. Projection pedagogies are likely to involve a pronounced movement towards a common pedagogy and a tendency towards a common system of evaluation' i.e. homogeneity and less discretion for teachers.

Who or what sets them?

All these boundaries are set by disciplines and maintained and policed by wide-ranging academic practices: elaborate gate-keeping mechanisms, peer review, hierarchically organised qualifications, initiation rites at various stages, acquisition of learning over time. Along with a strong sense of knowledge as property lie strong sets of identities and functions: the 'disciplines' of intellectual debate, the 'bestowal' of authority, a highly visible pedagogy, a privileging of symbolic mastery over practical mastery and so forth.

Who or what is 'working' the boundaries? How?

It has been established that RPL is part of contemporary challenges to the boundaries and boundary maintenance of traditional academia. The task now is to probe the nature of the boundary-work performed by RPL in such contexts. Aspects of RPL that challenge traditional boundaries are: the focus on the learner and on the learning (and the assessment of learning) acquired outside the academy, the high valuing of experience and learning from experience, the belief in the unfettered transferability of learning between contexts, the advocacy of fast-tracking rather than long-term acquisition, and the premise of 'earning' authority rather than it being bestowed. RPL practitioners and protagonists thus hold very different pedagogical understandings to those enshrined and privileged within the bounded terrain of traditional academia.

However, the strength and relative impermeability of the boundaries around traditional academia amount to a need for RPL to deploy technologies of reflection and portfolio development to move experience and the learning from it closer to those forms of knowledge valued in the context. Thus, reflection, portfolio development and notions of equivalence are used to broker the transferability of knowledge and seem therefore to be the key boundary de-differentiation devices of RPL. RPL practitioners or advisers obviously play a significant role in this process although how this boundary work happens in practice is unclear given the lack of empirical study. The literature suggests that it involves the deployment of reflective, experiential discourses and popularist, introjection pedagogies bordering on the therapeutic. How these enmesh, in practice, with the more traditional academic discourses of the context – or whether they do – would be worthy of further enquiry.

How powerful a boundary-working device is RPL in these contexts?

What in effect seems to happen in RPL is that prior learning has to be manipulated to fit the epistemological contours of traditional academic knowledge. This is clearly evident in the nature of the assessment criteria used (see above table) i.e. assessment through direct equivalence or through broader notions of equivalence. Learners are thus invited to recontextualise their prior learning as academic learning, with academic literacy and cognitive capacity often being more important than prior learning per se. In order to negotiate the boundary into academia, successful learners are, it seems, required to teach themselves the discourse of HE and to engage in processes of self-representation that are acceptable to the context concerned. Ultimately therefore in Mode 1 RPL there is a lack of engagement with formal curriculum knowledge. Although the site of knowledge production is challenged what counts as knowledge is not. There seems to be an enduring tension between attempts to make prior learning fit existing knowledge structures *and* the idea that RPL can challenge those structures.

The boundary de-differentiation devices referred to above seem ultimately to be rather weak ones. The firm and well-policed boundaries around traditional academic practices and identities are at most disrupted but not certainly not transgressed or dissolved by RPL: ultimately the RPL process seems to be a re-enactment and mediation of existing boundaries. It is therefore no surprise that RPL candidates, especially those whose prior learning was gained at a distance from formal education, are the least likely to be successful in translating their prior learning into formal curriculum knowledge (Trowler 1996; Harris 1999). So, there is a sense in which these forms of RPL advantage the already advantaged.

Furthermore, in reinscribing existing boundaries, the literature suggests that this type of RPL creates some of its own. Through a somewhat confessional process, learners are required to expose their prior learning to public scrutiny, to the 'disciplinary' gaze. Although assessment in RPL practices (in the literature at least) is often seen as a neutral, technical procedure, learners are essentially subjected to the traditional academic assessment practices of observation and examination. Such practices are a complex nexus of power-laden relationships between different forms of knowledge and cultures of authority. It could be argued that RPL is a more deeply penetrating assessment process than more conventional approaches, in that more of the learner enters the educational frame. This arguably creates the conditions for learner (self) discipline and (self) regulation which links to Foucault's concept of governmentality - the contemporary way in which social regulation occurs (Foucault 1979). So, paradoxically, whilst protagonists of RPL see themselves as transgressors of boundaries, as 'shaking the very foundations of the educational establishment' (Spencer et al 1998: 3) and freeing learners from the tyranny of academic disciplines, they could be more involved than they think in disciplining learners in other ways. The boundary-work of Mode 1 RPL seems to be an area ripe for empirical enquiry.

Mode 2 RPL - in WBL programmes

What boundaries and where? What is in/out? Who or what sets them? Who or what is 'working' the boundaries? How?

The WBL literature suggests that in negotiated awards, knowledge boundaries are more permeable - a direct response to the mode 2 knowledge production practices of the professions and the corporate world. Mode 2 knowledge production practices are more social, more specific to context, more diffuse and more performative and action-orientated than mode 1 practices. Knowledge, so produced, is characterised by a mix of propositional, personal, tacit and process knowledge (Eraut 1994; Solomon and McIntyre 1999; Challis 1997; Lahiff 1998). Traditional understandings of learning are virtually dissolved by mode 2 processes. Learning has become unbounded with individualised cognitive approaches giving way to investigative, reflexive and more social orientations.

Boundaries around knowledge are reconfigured with academics having only a part-share in the knowledge production processes alongside workplace supervisors and learners themselves. Thus definitional responsibility is shared and the academy finds itself dealing with knowledge which it has not taught. This refocusing of pedagogic orientation towards the outside world contributes to a weakening of the previously firm boundary between insider knowledge and outsider knowledge and a blurring of the differentiation between learning from experience and more formal knowledge. These boundary de/re-differentiations allow experience and learning from experience to play quite central roles - as conferring the necessary direction for the negotiation of a coherent learning programme - with coherence increasingly defined according to the needs of the employment context. This suggests a loosening of the boundaries around traditional academically prescribed notions of academic coherence.

Knowledge, for example, can be organised in less hierarchical ways, frequently embodying transdisciplinarity and curriculum flexibility.

Traditional academic identities and functions are under pressure and boundary management activities increasingly disrupted. In their place are new boundary working identities and functions, structured by wide ranging interests and values and constructed in ways that are fluid and permeable into which outside interests can insert themselves. For example, flatter structures, more horizontal lines of communication and new managerial functions replace traditional hierarchical yet collegial relationships. The learner seems to take a more privileged position and identity as a more active re/constructor of his/her own prior learning and future learning. This re-positioning also brings extra responsibilities – managing time and monitoring the development of the programme for example. Contemporary WBL learners are therefore both more visible and charged with a wider range of responsibility for their own learning than are their counterparts in traditional higher education.

The literature suggests that the above reconfigurations and reworkings of the boundaries around knowledge and pedagogic practices within WBL programmes are reflected in the RPL aspects of those programmes. A projection pedagogic orientation leads to an emphasis (within RPL) on planning future learning rather than documenting past learning. Prior learning and formal learning are thus brought into closer proximity through a process whereby both merge and change rather than the former being brought into line with a fixed understanding of the latter. Prior learning counts in terms of its relevance to the proposed learning programme and in relation to broad, generic notions of academic level, not in terms of its fit with canonical bodies of knowledge. Thus, the recontextualisation of prior learning that Mode 1 RPL necessitates seems to be less of an issue in Mode 2 RPL.

How powerful a boundary-working device is WBL (including its RPL component)?

There is no doubt that WBL programmes represent serious challenges to traditional boundaries in academia. They can be seen as boundary-working practices on all major pedagogic fronts - repositioning or even displacing existing pedagogic understandings and arrangements.

In actively reconfiguring boundaries, WBL also creates some of its own. In traditional academia, the boundary policing devices and associated workings of power were easy to see. In WBL boundaries are less obviously policed; rather, they are contested in more unclear ways. As Solomon and McIntyre argue:

Both the university and the workplace "speak" in terms of power-knowledge discourses which in the context of work-based learning are sometimes congruent but often are not (Solomon & McIntyre 1999: 17)

So, although suggestive of greater social inclusiveness, power-knowledge issues are likely to be struggled over under the benign and seemingly progressive banners of 'negotiation' and 'collaboration'. For example, who exactly decides what knowledge counts or what constitutes an appropriately coherent negotiated award? How do propositional, personal, tacit and process knowledge combine in a programme? What is actually assessed? How do the boundaries around the worlds of work and the academy actually blur in practice? How do hybrid discourses 'laminates' one onto another (Silverman 2000: 41)? Whose interests prevail? Solomon and McIntyre (1999) argue that boundary-work of WBL amounts to new and complex processes of surveillance and regulation for learners (and arguably for academics too) – most importantly, new forms of subjectification and self-regulation. In effect 'discipline' is reconfigured i.e. not located in traditional academic power-knowledge configurations but in networks of emergent regulatory practices shared between learners, academics and employers.

Mode 2 RPL seems to have become part of the process of boundary reconfiguration. As a practice, it is able to succeed in some of the boundary-work that was attempted (less successfully) by Mode 1 RPL practices. However, it does not seem to be RPL per se that raises the challenges to boundaries; the WBL programme as a whole that does that. RPL, it seems, is put to work as a boundary-working device within a bigger project. As with Mode 1 RPL, the boundary-work of Mode 2 RPL is ripe for empirical investigation.

Implications for empirical work

The analytical framework based on the notions of boundaries and boundary-work, as applied to the literature, seems capable of generating significant debate around issues of power, knowledge and identity. It is also

suggestive of fresh discursive approach to empirical enquiry. What little empirical research has been undertaken in RPL seems to have been conducted in quite narrow terms – certainly not framed by a post-structuralism paradigm. There does not seem to have been much (if any) empirical research into the inner boundary-workings of RPL. The following questions could therefore be empirically explored using the same analytic framework:

- What power-knowledge discourses are at work within RPL? How do they operate/are they consumed? What 'work' do they do?
- What identity positions are available for learners and practitioners within RPL? How do they operate/are they consumed? What 'work' do they do?

To end on a reflexive note, in writing this paper I have found myself working at the edges of several literatures. Although I have attempted to focus primarily on the immediate RPL literature, it has been necessary to refer to and use other literatures particularly to surface the silences in that literature. This paper represents one 'reading' of those literatures; itself bounded by the approach taken and by the choice of literature to review. There may be a need to examine in more detail what literature I included and excluded and what boundaries have been created by the classifications I have made. The use of the notions of boundaries, although generative, tends to itself be premised on binary and potentially problematic notions of what is in or out. Is it the case that doing boundary-work in some way constructs the problematic it seeks to deconstruct?

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PROMOTING KNOWLEDGE SHARING IN A TAFE ORGANISATION: BUILDING CREATIVE WORK BASED LEARNING PARTNERSHIPS

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This paper describes research of the human and structural relationships in one Victorian Training and Further Education Institute (TAFE), and identifies the way those relationships enable the sharing, and generation of organisational and individual knowledge. The research aims to identify and further explore the tensions resulting from the diverse drivers for organisational growth and development for the Institute; tensions between the corporatist rationale for collecting and commodifying the intellectual capital and knowledge of the people of the organisation and the motivation of individual staff members to freely and openly share their knowledge.

The Victorian TAFE workforce is not alone in being subjected to major changes resulting from global shifts in directions and operations, the impact of technology and new ways of working in new organisational structures. These changes are juxtaposed an ageing workforce, blurring of traditional practice boundaries, increasing commercialism within continuing government constraints, and increasing use of sessional and casual staff. It is however, unique in terms of its particular size, situation and cultural perspectives. Recent departures from the workforce have resulted in a diminished organisational knowledge that is not only lost to the organisation but becomes a source of competition. The fact is that the Vocational Education and Training system, and the organisation often have no idea of what they have lost in terms of tacit and explicit knowledge.

As part of a wider research thesis, an action learning approach was used to examine how organisational systems in a TAFE Institute enable individuals and groups to generate new knowledge in an equitable and mutually transformational way. The research uncovered not only a diverse range of creative practices and learning communities, but also a plethora of barriers (real and perceived) to the development of more widespread work based communities of practice. In order to examine the extent to which organisational systems in the newly amalgamated Institute support the creation of spaces in which communities of practitioners can take the time to engage in learning discourses that can result in the creation of new knowledge, it was important to unpack the complex nature of a TAFE organisation's dynamics as they facilitate or inhibit the capacity of staff to share their knowledge and generate new guides for action.

An aim of the research is to provide a shareholder model for knowledge generation constructed within a human service organisation. Staff within such organisations may find that the model proposed recognises a range of issues that acknowledge their concerns, and provides a means by which they can benefit from learning through dialogue, shared practice and the development of communities of practice. This paper provides a discussion of the background and context of the research, and outlines the methodology used by the researcher. Some preliminary findings are highlighted.

A learning organization is an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights.

(Garvin, 1998:51)

Introduction

The world as experienced by any person and particularly workers, has changed significantly in the last 50 years, and will continue to change at an increasingly rapid pace. Most people have become used to the fact that there is less stability in the way they work, the places in which they work, and the nature of the groups that make up work units. Increasingly the instrumentalities of work and communication are becoming technologised as a result of which, the demands for ongoing learning and skills development push workers into an environment of continual challenge and commensurate anxiety.

While organisations have changed in response to the challenges of deregulation, breakdown of trade barriers and the development of a global economy, the ways in which people and groups learn with and from each are changing as well. More flexible work practices and the increase of contract based, limited tenure work decreases the occurrence and stability of traditional work units. The overwhelming amount of data and information

available in print and electronically, is a result of the increased capacity of people to generate new material through more rapid and immediate communication, investigation and analysis using a range of technology as the medium.

In many organisations the value of a worker now lies in what she or he knows or can readily access, and how that knowledge can be used for the immediate benefit of the organisation or employer. This worker however, is increasingly required to accept conditions of employment that offer little security, and is subject to continual appraisal based on performance at highly specified levels. Once this worker would offer manual skills (using the employer's tools and processes), and loyalty to the organisation in return for secure employment conditions, a regular wage and a local environment in which to work. A worker in today's organisation is likely to trade her or his cognitive capacity in a range of global contexts, on a short term contract or project basis, with little opportunity to secure a long-term position with any single employer thereby accumulating the benefits of long-term tenure that were once taken for granted in society.

Termed in popular literature 'knowledge' or 'portfolio' workers (Drucker, 1993; Albert and Bradley, 1994), these employees find themselves in a professionally isolated working environment, forced to be self-reliant, resourceful and competitive, and increasingly constructing their own working contexts. In order to remain current, and therefore employable, these people (who are often victims of organisational restructuring, downsizing and amalgamations) must rethink the opportunities they have to communicate with their peers and colleagues, and engage in the social activity of dialogue and learning.

The question is, how do they do that? While much has been written about the 'learning organisation', there is a need to focus on the way the person in any organisation is really able to contribute to, and benefit from, their time committed to working in such an organisation. This requires an examination of the structures, systems, culture and practices of the organisation, and the way in which these features facilitate or inhibit individual and collective learning between its employees.

Background to the research

This research study is situated in the Vocational Education and Training (VET) context, specifically as a study of a newly amalgamated Institute of Training and Further Education. As part of the post-compulsory education and training context in Australia, Institutes of Training and Further Education provide an environment predominantly for the development of an individual's competencies to enable them to gain employment in a particular organisation, enterprise or industry.

Chisholm Institute is a major applied education and training provider resulting from the merger of three TAFE Institutes in the southeastern metropolitan Melbourne region of Victoria. With over 2,000 staff comprising teachers and trainers, administrative and technical support workers and managers, the Institute provides a complex picture of diverse histories, practices and experiences. Within this organisation, these groups of staff work to support and deliver the core business of the organisation, however their roles are increasingly becoming blurred, as the forces of market models, competition and 'the bottom line' take precedence.

There have been dramatic changes in the conduct of the core business of education and training, and the profiles of staff at all levels in terms of composition, hours worked and staffing categories. However, it seems that the organisational systems within Chisholm do not provide a sufficient framework for defining what the organisation collectively knows, what people do, and how they do the things that enable the organisation to function and grow. With recent voluntary departure packages partly as the result of organisational downsizing, it has become apparent that the collective knowledge, in terms of memory and learning, of the organisation is unrecognisably diminished and often becomes a competitive force.

There is, however, an inbuilt tension in these assertions. While the organisation may believe that it should creatively accumulate the collective know-how and experience of its staff, there is an argument that individual knowledge rights must be recognised. In addition, it should be recognised that it is difficult to disconnect an individual's thinking and doing for the purposes of packaging that 'knowledge' as a transactable commodity. An individual's tacit knowledge is developed within a unique environment, often a range of workplaces, and as a result of individual histories, networks and experiences. This capacity is living, continually reworked and transformed as a result of collaboration and communities of practice.

To be able to acquire, assimilate, share and create knowledge is, according to Jordan in Johnston (1998) the 'ultimate organisational capability, a meta-competence which allows an organisation to consistently outperform its rivals'. For this to happen there needs to be equitable learning and working arrangements through which the organisation and the individual can be mutually transformed. This transformation can only be achieved as a result of sharing and generating new knowledge and new guides for action that each person is able to use for further individual and organisational competitive sustainable growth.

Changes in TAFE

TAFE Institutes have been subject to a number of influences that have initiated responses in the form of restructures, through departmental amalgamations, reductions in the number of permanently employed staff, and increases in the number of sessional and contract staff, by outsourcing some functions, by redesigning jobs, and seeking alliances with enterprises. According to a recent OTFE Research project (Malley, Hill, Putland, Shah and McKenzie, 1999) the changes in the ways that people work, and the ways that organisations are structured, create two sorts of pressures on TAFE Institutes. First, the Institutes must be able to understand what is happening in the world of work so that they can anticipate and respond to client demand for new forms of skill and knowledge. Second, wider changes in the world of work also have implications for how the Institutes themselves are structured and the roles that TAFE staff need to be equipped to perform.

The same study identified the following features of the Victorian TAFE workforce. It is relatively old, with more than 40% of tenured male teachers aged over 50 years, and only about 25% of female staff aged over 50 years; substantial numbers of TAFE teachers will retire in the next decade – over one-third of the teacher workforce, or approximately 2,000 teachers. Add to this the expected retirement of a large group of executive staff and this highlights the urgent need for succession planning within the system. Sessional teachers appear to represent the main source of 'new blood'; with a significant proportion of the permanent TAFE teaching workforce employed at their current Institute for 15 years or more. Although such stability can bring considerable advantages in terms of experience and organisational knowledge, there may be trade-offs in terms of the injection of new ideas and broader perspectives. A significant impediment to recruitment of is the narrow salary range of \$45,000 and \$50,000 per year for TAFE teachers, and this could have significant implications for the recruitment of staff with skills that are in demand in the wider labour market and the incentives for existing staff to invest in their own professional development.

Other drivers of change

The significant changes recognised within this research are those of a social, organisational and technological nature. The notion of globalisation, while considered by some as a 'catch-all expression' (Jakupcic and Garrick, 2000:12) for a wide range of different concepts, encompasses main ideas relevant to this work. It can be seen as driving the redistribution of workforces and the rise of people within those workforces nominated knowledge workers. The increasing influence of advancing technology on the economy, culture and society is interwoven with a rapid increase in the pace of change. This is demonstrated through a picture of more organisations operating beyond their traditional geographical boundaries, i.e. becoming global in their operations and virtual in their presences.

According to Limerick et al, (1998:2), the new form of organisation in the 21st century will have strategies, structures and cultures that will appear to be quite different from those with which have characterised organisations in the past 20 years or more. While it is predicted that this new form of organisation will require an aptitude for working across different sectors and also competing with other sectors for scarce resources, it also presumes ability for a person to assume responsibility for the ongoing design of their work place. However the reality is that while organisational hierarchical structures are becoming flatter, organisational restructuring together with outsourcing and globalisation creates the challenges of 'knowledge loss and distributed working' (Hildreth, 1999:347). Although these mechanisms reduce the outlay for human capital in the short term, in the long term, they effectively 'lop off' a wealth of knowledge and experience that is then lost to the organisation as a tacit and explicit enabler of sustainability and continued growth.

Thus it would appear somewhat mythical that the organisational world is characterised by smaller, autonomous, interdependent, collaborative units with empowered staff at the helm. In reality, this world seems to be fostering

an increasing polarity between the emancipated and independent worker, and the disenfranchised, disempowered worker who works in a world of potential social upheaval and exploitation. While the drive in these new-millennium organisations is for flexibility, efficiency and creativity, in many instances this will come at a huge cost. Although the postcorporate organisation may seem some years away yet, it is interesting to note the use of the words 'flexibility, efficiency and creativity' as they permeate strategic directions documents produced by the Australian National Training Authority (ANTA) and the Office of Post-compulsory Education, Training and Employment (PETE). Tomorrow's world is already happening. The question that is important to this research is 'to what extent is this a picture of organisations such as TAFE Institutes?' The Case Studies produced from this research identify the degree to which these contentions of the authors are borne out in a large, Victorian public sector organisation that focuses on vocational education and training.

The advent of more powerful, decreasingly expensive information and communications technologies has meant that a person's frame of reference is less directly tied to their immediate workplace. This creates a society that Castells (1996:13) describes as 'both capitalist and informational', with technology giving us the capacity to use and build on knowledge as the main source of productivity. It can be said that technology has facilitated the transition from mass production to flexible production. To enable an organisation to respond immediately to variations in the market, an increasing proportion of employees must build the capacity to access information electronically via a wide range of networks, and from any place. This assumption implies that enterprise productivity – and even enterprise survival – depends on having workers with the skills, knowledge and motivation to be able to quickly scan the environment and respond and implement appropriate responses. This idea is consistent with what O'Connell (1999) terms 'desktop empowerment'; competence in the use of personal computers, the Internet and e-mail which characterises employees who can think and act independently.

In a recent Victorian research project (Malley et al: 1999) the researchers concluded that workers in TAFE Institutes needed to be competent in the use of information and communications technology. They maintain that few jobs in TAFE have not been affected by recent technological change, with the impact going well beyond those who are working directly in providing education and training about, or through, new technologies. Whether it is in the classroom, the workshop, the Institute office or support service, the impact of technology is there to be seen. However, this study raised significant questions about the extent to which staff have been prepared to effectively use new technology, and the extent to which some staff remain out of touch with technological change, and why. There may be a number of reasons for this gap, including organisational and individual resources, time allotted to the learning process, and the degree of importance attributed to the development of the skills. While it is apparent that the ability to use technology to work more effectively is becoming regarded as a core organisational competency, there is little evidence in the literature of ways in which staff remain in touch with each other in 'learning' ways, while increasingly being 'touched' by technology.

The role of knowledge in the new organisational framework

Not only is the nature of work in organisations altering significantly, but so too are the labels being affixed to these organisations. Of greatest significance to this research are those labels pertaining to 'knowledge'. As early as 1981 Dale Zand characterised a 'knowledge organisation' as one in which the ratio of knowledge workers to production workers was increasing, the relationship between the two groups was changing, and where knowledge was becoming the leading edge of the competitive effort. This early analysis appears to have had a strong influence in the simply amazing number of texts, articles and discussions that have been published on the topic of knowledge and organisations in the last 20 years.

Terms such as 'organisational wealth' (Sveiby, 1997), 'managing knowledge' (Albert & Bradley, 1997), 'working knowledge' (Davenport & Prusak, 1998) and 'learning staff and staff development' (NCRVE, 1998) are being used to describe the increasing value placed on the knowledge held by individual employees, and collectively by the enterprise. It is somewhat paradoxical though, that despite the rhetorical importance that enterprises frequently accord to the value of the human capital embodied in their employees for organisational success, few enterprises have developed systematic ways of identifying and managing their employees' skills and knowledge. In times of high labour mobility, enterprises face a particular challenge in finding ways of retaining the knowledge held by key employees after they have left. According to Kelleher:

the rapid introduction of new information and communication-based technologies, coupled with recognition of the need for reliable, high quality, flexible production techniques have created an environment in which older notions and individual employee needs have been challenged. (1999:3)

In this context organisational management has had to re-consider older forms of management functions influenced by Fordist production methods and recognise the need for greater synergy and systematic approaches to managing what has been increasingly called its best assets – people. The model of a 'knowledge worker' has been strongly promoted over the last decade (Thurow, 1992; Drucker, 1993) indicating that knowledge, and its use to rapidly create new knowledge, is becoming the most significant competitive weapon in the twenty-first century. What has changed in the last few years is that there has been a shift from emphasising skilled people as the only sustainable competitive advantage to an increasing reliance on the knowledge worker as the organisation's greatest asset in the future. Based on the arguments of these and other authors, we come to a definition of knowledge work as 'work in which most activities are information-based, knowledge intensive and knowledge generating'. Given this definition, how much of the work of TAFE teachers could be termed knowledge work?

The new social structure is termed a network society, and the new technological paradigm is a grouping of what Castells (2000:7) terms 'inter-related technical, organizational, and managerial innovations'. Within this structure, meaning is constantly produced as a result of individuals' actions and interactions that result in meaning sharing and practice shaping, both of which impact on the evolution of cultures - systems of values and beliefs that inform codes of behaviour. This notion of a network is taken one step further by Kurtz (1998:57), who describes it as an 'organizational interconnectedness for associating with others who hold similar interests, in order to develop and access ideas, information, support, and other resources that enable network members to improve what they are doing or to achieve a goal'. This interpretation is used in this research to examine the nature of groups and communities within the TAFE Institute, and determine the level to which the organisation operates as a network, as opposed to a traditional 'silo' structure that compartmentalises its people and the knowledge they have.

In a recent critical report on the subject of 'Knowledge Management in the Learning Society', the OECD distills the enormous number of contemporary references to the knowledge economy, and offers the following features of a 'knowledge intensive organisation', a concept alluded to earlier:

The organisation involves intensive use of knowledge (not just information, since knowledge is stock of experience not a flow of information). Individual professional members of the organisation have high levels of esoteric knowledge that cannot be widely shared, that is, such members are specialised and cannot readily be substituted for one another. (2000:57)

Through this analysis, it should be possible to answer the earlier question. Based on the features described, staff in a TAFE Institute - teachers, managers and administration workers - should be regarded as knowledge workers in a knowledge intensive organisation. The fact remains that there is no research to hand that actually describes TAFE Institutes, and their staff, in this light. Part of the problem is that while many examples of such organisations are cited in the private 'high tech' manufacturing and product oriented organisations, almost no analyses exist of public sector organisations such as education.

The organisational structures of many large and some small enterprises reflect the primary attention given to the reduction of organisational waste of time, resources and work. However, while they emphasise efficiency of the process, they do not reflect the development of organisational interaction across structural silos that generates the sharing of tacit knowledge and experience in order to support the development of explicit organisational knowledge. This maintains Castells, is what is needed to communicate worker experience and increase the formal body of knowledge in the organisation. He synthesises the value of this organisational knowledge in the following words:

In an economic system where innovation is critical, the organizational ability to increase its sources from all forms of knowledge becomes the foundation of the innovative firm. (1996:160)

This process of innovation requires the full participation of all workers so that tacit knowledge is shared and not hoarded. Furthermore, and perhaps most importantly, this process requires stability in the workforce so that

individuals feel valued and motivated to share their knowledge with peers, managers and the organisation while being recognised for individual and team inputs.

Organisational systems and learning

Knowledge, defined by Senge (1998) as 'the capacity for effective action', originates and is applied in the minds of the knowers – this is why one person's knowledge cannot be stored for ready use by others. It is a 'fluid mix of framed experiences, values and contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information' (Davenport and Prusak, 1997). The question is thus raised as to the extent to which tacit knowledge can be made explicit. The process is far more complex than popularly maintained.

In organisations knowledge often becomes embedded not only in documents or repositories, but also in organisational routines, processes, practices and norms. However, these documents or actions can become organisational defensive routines in that they create an environment of ambiguous meaning and undiscussability (Argyris and Schön, 1996: 99). If sharing knowledge occurs when people are genuinely interested in helping one another develop new capacities for action (Senge, 1998) then an organisation needs to support an environment that nurtures a motivation to enter into dialogical knowledge sharing and generation of new guides for action. An organisation may be said to have learned when it has acquired 'information (knowledge, understanding, know-how, techniques, or practices) of any kind and by whatever means' (Argyris and Schön, 1997:3). This requires an alignment of the organisational structures, systems and processes in such a way that individuals are able to identify a raft of 'sites' in the organisation that they can call their own, as they need.

An interesting explanation of organisational learning is proposed by Cook and Yanow (1993: 378) who contend that an organisation's capacity to act or perform, like a symphony orchestra, is more than the sum of the knowledge and capacity of the employees or players. The knowledge and experience brought by each individual enable, through sharing in groups in the organisation, the activity of organisational learning. Thus learning is related to knowing; a point that this research will explore more deeply in terms of the relationships that facilitate or inhibit learning and knowledge generation in an organisation. This is a picture of individuals acting in collective practices, communities and institutions; not 'reducible to the sums of their individual action' (Engeström and Meittinen (1999:11).

The ability to create, acquire and transfer knowledge in an organisation is, to a large extent, dependant on the way the structure supports learning groups. A number of writers acknowledge the importance of teams for the future success of organisations, and the challenge of creating teams in and between different types of workforces. NCRVE (1998) places critical emphasis on team learning rather than that of the individual. Team learners listen, publicly acknowledge mistakes and learn from them, share perceptions, participate in discussions that raise conflicts to the fore and thereby help to resolve them, connect one another to the organisation, and become partners in helping the organisation reach its goals. This work aligns with Wenger's (1996) concept of communities of practice, and the works of Senge (1998), Dixon (1994), Argyris and Schön (1996) and Flood (1999) on organisational learning and development of learning communities. The exploration of these works was an integral part of the work of the Action Learning Set in the research phase, in that the individuals used some of these works to examine more closely the paradoxes surfaced within the organisation.

Methodology

This research investigated a 'contemporary phenomenon within its real-life context' (Yin, 1989:23), exploring the ill-defined boundaries and relationships between phenomena and the context within which they are observed, and using multiple sources of evidence. This approach was chosen because the research questions take the form of 'how and why' and therefore give rise to a more explanatory investigation. While the literature review assisted to identify the research questions, it did not determine the answers. The case studies deal with the 'full variety of evidence' (Yin:20) in that the researcher has relied on observation, dialogue, interviews and documents relating to individuals, the organisation and the system. These research questions assist the researcher to observe, question, reflect on and analyse the problems of working in the organisation, and to expand on multiple 'moments' to examine 'pervasive problems of human interaction' in Chisholm.

The research is written as two case studies. The first Case Study focuses on the way the participants interact, learn with and from each other, and come to new understandings that enable them to frame new guides for action and development. The focus in the second Case Study, is in the way in which the organisation is a site for tensions, agendas and goals, and the way in which formal groups and loosely connected communities are supported to, or inhibited from, learning with and from each other in ways that enable them to work in the organisation.

Action Learning as the research framework

Using an Action Learning framework, this research examined cultural and professional perspectives of the membership of Chisholm Institute. To achieve this, the research explored the:

- tensions between the perceived value of individual and organisational knowledge
- workplace systems that support and recognise the generation of organisational knowledge, and
- potential for the development of new stakeholder/shareholder models of organisational working knowledge.

Action Learning is a work-based learning approach that enables a group of committed participants to explore an issue or range of issues using a reflective action cycle to learn individually and as a group. The process is built on the principles of experiential learning (Kolb, 1984), 'reflection-in-action' (Schön, 1983) and 'double-loop learning' (Argyris and Schön, 1978), with a group of individuals involved in the process referred to as a 'Set' (Weinstein, 1997; McGill and Beaty, 1996). Action Learning relies on a team approach, real issues and reflective learning as its distinguishing features, echoing Schön's emphasis on the value of reflection as a mechanism for searching for 'convergence of meaning' (1987:118) with others engaged in exploratory dialogue.

In this research, Action Learning provided a forum within which participants continually raised questions in a spiral process, confirmed, challenged or refuted current assumptions about embedded workplace practices, and developed real alternatives for innovative models of equitable knowledge generation within the organisation. In some instances it enabled the participants to see how barriers could be broken down between functional components of the organisation – a capability considered by Dotlich and Noel (1999) to be a strength of the method.

The research questions

The research questions derive from extensive exploration of the literature in terms of the changing nature of work, the structures, systems and processes within organisations, and individual and organisational learning practices. Significantly absent are discussions and analyses of the ways in which people in organisations, particularly large enterprises, learn from each other, share new ideas and create new knowledge that assists them in their evolving practice, and enable the organisation to maintain its competitive edge. Further there is little reference to the construction of equitable frameworks that support inclusive approaches to knowledge creation.

Therefore, the questions reflect the recognition of the innate tensions that result from the outcomes of the diverse drivers for organisational growth and development, and ask:

1. Is knowledge (tacit and explicit) valued as a basis for professional practice and organisational growth in TAFE?
 - What is the perceived relationship between new knowledge and organisational growth?
 - What is the perceived relationship between new knowledge and improved professional practice?
 - How is knowledge viewed as a 'transactable' commodity by staff and the employer?
 - To what extent do staff view themselves as knowledge workers in TAFE?
2. What are the facilitators/inhibitors to knowledge generation in a TAFE organisation?
 - What are the motivators for staff to work to generate new knowledge in their practice?
 - Do working arrangements affect an individual's or group's motivation to share and generate knowledge?

- What are the perceived benefits of sharing/generating knowledge?
 - What do staff actually do to generate knowledge?
3. What is the relationship between organisational systems and individual and organisational learning?
- Does a TAFE organisation operate as an informational organisation as opposed to an industrialised organisation?
 - Do organisational systems maximise individual and organisational learning?
 - Are individuals recognised for generating organisational knowledge?

These questions were then used to plan the progress of the action learning set. Each of the six sessions was framed around a theme represented by a set of questions, and this enabled a structured approach to be taken to the research, ensuring that the outcomes are reached in a timely way.

The research participants

For this research the selection of the participants was of critical importance. If the set was to really represent a 'microcosm of the organisation', then it was imperative to ensure that the participants were representative of the diverse professional groups employed, and all levels of the hierarchy. The set comprised six members of staff of Chisholm Institute who represented this diversity. In the words of Tenkasi and Boland, this set was a 'community of highly differentiated yet reciprocally dependent individual specialists who through an ongoing process of mutual perspective taking were able to surface, reflect on, exchange, evaluate and integrate their individual knowledge and theories of meaning with others in the organisation' (1998:5). All but one of the participants came from a formal teaching background. This was an important feature of the action learning set because the greatest changes in the VET sector, and particularly TAFE, have impacted on teachers. Therefore, the perspectives of these people were crucial in unpacking the way the changes had affected them and their colleagues.

Participants were given the opportunity to learn together by observing and analysing the ways that knowledge is valued, shared and rewarded in the organisation. Using the research questions as a starting point, the participants were encouraged to describe their observations, use current literature to question the meaning of their observations, and challenge the espoused and in-use theories of the organisation. This required a conceptual shift from 'putting theory into practice' to becoming a 'critically reflective practitioner' - the very essence of Action Learning. Central to the action learning process was the need for trust and confidentiality. The nature of the approach requires that individuals are able to frankly discuss issues about their roles in particular groups in the organisation. At times, individuals identify other people or practices in the organisation (past and present) that are recognised by other participants in the group. Without this freedom to speak about real situations, and explore real actions, the desired outcomes of the research cannot be achieved. The set met two-weekly for four months between February and May 2000. While the participants were guided by the nature and desired outcomes of the research, there was an equal emphasis on the learning of each member of the set, made explicit in each member's action plan.

Preliminary findings

The Action Learning set highlighted the participants as a small, but representative group of Chisholm staff, who brought to life real problems, experiences and learnings that might be similar to the experiences of their colleagues throughout the Institute. As the participants became more comfortable in talking about themselves and their experiences in the group, they released some long-held emotional perspectives relating to the amalgamation and the dissolution of networks. With little prompting the participants started to discuss issues such as their feelings about the groups they had left behind in the amalgamation, and the responsibility (particularly from those managers in the group) they felt for those they had 'abandoned'. Towards the end of the process, the researcher facilitated the participants to start thinking about the development of some conceptual approaches to knowledge sharing in the organisation.

Through this research, this particular group of participants had the opportunity to further understand their own and others perspectives; a learning that moved through the reflective and experiential learning cycle to framing

possible guides for new action in the organisation. This reflection was recorded in the reflective journals that the researcher and the participants maintained throughout the process.

The second Case Study examined the Institute as part of a larger state and federal system, and explicated the issues that drive and challenge its capacity to operate as a public training and education organisation. The experiences of the participants in the action learning set were used as a means of questioning and challenging the practice frameworks constructed by the organisation through its structures, policies and procedures, and cultural mores.

As the research is further written up, the key features of the two case studies are being juxtaposed to provide a basis for surfacing and examining the values, structures and practices that facilitate or inhibit the equitable sharing of knowledge in this organisation. This analysis is being divided into three parts:

- conclusions about the degree to which the organisation can be considered to be a knowledge-sharing organisation
 - proposition of an illustrative model that encompasses those practices, structures and learning relationships that are considered to be the most successful in developing a culture of knowledge sharing and new knowledge creation in this organisation, and
 - identification of ways in which this model might be customised for application in other similar organisations.
 -
- This will be the basis of discussion at the 'Working Knowledge' conference

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INCENTIVES AND BARRIERS TO LEARNING IN THE WORKPLACE: A RESEARCH AGENDA

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Introduction

In the UK, interest has recently been reawakened in learning, which coincides with a wider call for 'evidence-based practice' in a range of professional areas, including teaching (Hargreaves, 1997). There have been pressures to use research to improve performance in all educational sectors, as part of a drive to raise achievement levels. In this context, the Economic and Social Research Council (ESRC) launched its largest research programme ever, focussed upon Learning and Teaching. The inclusion of 'teaching' in the title indicates where the centre of attention lay. Nevertheless, it welcomed proposals to research learning in any context, with the emphasis on using the research to help improve learner achievement. We won funding for a 'research network', in this Programme, focussed on 'Improving incentives to work-based learning'.

Here we explain the rationale for our research, outline the foci of the five projects that make up the network, and raise some methodological challenges. As the research is at an early stage, we welcome comments and criticisms that can aid our work.

The research rationale

The social context of the workplace and the conflict embodied in the wage relationship and wider systems for the management and regulation of employment have to be the starting point for any analysis of learning at work. Access to formal vocational education and training (VET) is significant in contributing to competent performance and in establishing participation in a community of practice. Equally important are the opportunities for informal learning from peers, supervisors and mentors as well as from the nature of the work process itself (Lave and Wenger, 1991; Eraut, 1994). It is also necessary to explore the extent to which the broader regulatory structures of the employment relationship encourage or discourage employers' investment in formal learning and the adoption of forms of work organisation conducive to the promotion of informal learning.

In the workplace, workers learn to modify their performance and to understand their roles, including gender roles, in the structure and interactions of the organisation. In this respect, job roles, position within a hierarchy and inclusion within or exclusion from career ladders contribute to managers' expectations of employees' potential to learn and progress and employees' own aspirations for themselves.

To develop an understanding of the workplace as a social context for learning it is necessary to challenge two linked theoretical positions that are common, if often implicit, in debates about learning and employment. They are human capital theory and rational action theory. These theories are linked through the assumption that actors are predominantly rational, in the sense that they strive to maximise their satisfaction of preferences (Hindess, 1988).

Becker (1976, p8) sets out the general principle that this approach 'is applicable to all human behaviour'. One example is his theory of training (Becker, 1975). He argues that employers will pay for 'specific training', which has no value in any other firm; but not general training. The only viable alternative, he maintains, is for the worker to pay for such training, as it is the trained worker who benefits, in terms of higher pay and/or a better job. But this argument presupposes that decisions, about training provision, are made according to economically rational principles.

There are three counters to such theorising. Firstly, Hindess (1988) argues that many of the underlying premises are false, such as the assumption that the structural features of social life are reducible to the actions of rational

individuals. Secondly, Bourdieu (1998) argues that those outcomes that rational action theorists claim to explain can be more naturally accounted for in other ways. Thirdly, these other ways fit more closely with research data about the nature of social interactions and behaviours.

For example, Hodkinson et al. (1996) demonstrated that choices made, by young trainees and their employers, were not economically rational; and that social positions influenced the perceptions and opportunities of those involved, as did the unequal power relations around education, training and work. Senker (1996) demonstrates that Becker's theory of training cannot explain why UK engineering firms historically invested in general training as part of their apprenticeship provision.

In the contemporary field of work-based learning, organisations face a fundamental uncertainty about whether they will recover any investment in learning. Also, although workers and managers share some areas of common interest with respect to learning in the workplace, training can have purposes other than the transmission of skills and knowledge, including the legitimisation of new forms of work organisation and work intensification (Rainbird, Munro, Holly and Leisten, 1999). The way in which formal and tacit skills are deployed in the workplace may contribute to workers' resistance to management controls and attempts to deskill (Braverman, 1974). Access to formal learning opportunities is linked job design: posts requiring higher levels of qualification are associated with relative job autonomy and lower levels of qualification with more narrowly constructed jobs and tighter levels of management control. Differential access to learning contributes to the segmentation of the internal labour market, establishing the basis for wage differentials and creating career mobility for some groups of workers but not for others. Access to learning opportunities is integral to questions of status and reward, and the social context of the workplace has the potential to reinforce and/or to challenge individual's expectations of learning.

Consequently, we need to know more about the incentives and barriers to improved learning in the workplace. The tradition in the UK of relying on voluntarism has failed (Evans, et al., 1997). The Labour Government and to the Conservative governments which preceded it, have lacked the political will to intervene in company decisions regarding training. Rather, they have attempted to use mechanisms linked to labour market programmes aimed at young people and the education system to increase the level of formal qualification of the workforce. The incentives for employers to train have relied on the business case for skills investment, and encouragement to adopt quality standards rather than compulsion. A consideration of the barriers to better quality work-based learning, and to improving access, therefore, has consequences for policy. We will address a number significant questions through qualitative research conducted in the workplace and on work-related skills. What are the underlying causes of these barriers, and which of these causes are most amenable to alteration or amelioration? What additional incentives can be provided, to make it more likely that employers would invest in the provision of learning and the provision of working contexts more conducive to workplace learning? What incentives might encourage increased take up by workers of any opportunities presented? In particular, what can be done to improve the access to and quality of work-based learning for those underprivileged groups that have least opportunity to learn at work?

The nature of work-based learning

Current approaches to understanding work-based learning emphasise its collective nature. There is a correspondence between these approaches and our wider concerns with the relationship between learning and the contested organisational practices of the workplace. One aim of the research network is to improve our theoretical understanding of the pedagogical processes operating in contemporary workplaces. We will draw on social and activity theories of learning (Lave, 1995; Lave and Wenger, 1991; and Engeström et al., 1995) to examine the ways in which skills and knowledge are passed on and acquired in communities of practice involving a multiplicity of actors. Attention will be given to collective work-based knowledge (Heidegger, 1995), and to recent research into the role of informal learning and tacit knowledge in the development of workplace competence (Eraut et al., 1998).

Learning in the workplace takes many forms. Lave and Wenger (1991) recognise the significance of learning from peers, as well as experienced practitioners and masters. Immediate workgroups can be important in supporting or discouraging learning, for example through their willingness to provide support whilst learning is undertaken. Equally, for occupational groups that have traditionally had little access to formal learning, peer group pressure may create an anti-learning culture. Management attitudes to the identification of learning needs

and objectives need to be examined as well as their relationship to training professionals. Equally, supervisors may have an important role in identifying and communicating information about formal learning opportunities, as well as in supporting or undermining informal learning. A focus on the workplace provides scope for examining the extent to which job design and the social organisation of work require or discourage learning. It has the potential to encompass resistance amongst different sections of the workforce to training and development as well as positive attitudes towards them.

Despite the rapidly expanding research literature around the nature of workplace learning, there is more theoretical development to be done. For example, there is a tendency to treat learning as if it is a unified activity, with rival theories competing as to which conceptualises and explains it best. As our research unfolds, we will explore the value of considering learning as a series of different, inter-related, activities.

For example, we could consider learning in a matrix. One axis is divided between learning which is intentional/planned and that which is unintentional and unplanned. On the other, between learning focussed on already known truths, and that which addresses the unknown. This gives four types of learning, which can be further divided into predominantly individual and group forms. The four are:

(i) The intentional/planned learning of that which others already know.

This includes most formal training situations, and the deliberate acquisition of skills/knowledge through books, the web, open learning, etc. A significant part of traditional apprenticeship training was of this type, as master craftsmen trained apprentices in the skills of the trade. In predominantly individualised theories of learning, based on experiences in formal settings, this type of learning is implicitly universal.

(ii) Socialisation into an existing community of practice.

Situated cognition (Brown et al., 1989) and the anthropology of Lave and Wenger (1991), moved this debate onwards. For them, the new apprentice learned by becoming assimilated into an existing community of practice. What was learned was everything that was entailed in belonging to that community, which pre-existed the arrival of the new learner. This can apply in apprenticeship situations, but also when a person changes jobs. Much of this type of learning is involuntary and tacit. Theories of learning developed to explain type (i) don't work well here. On the other hand, because much of their fieldwork was in traditional societies, Lave and Wenger may under-estimate the significance of type (i) learning, in modern employment settings.

Type (i) learning cannot exist without type (ii), and they sometimes conflict. In the school setting, being socialised into the community of practice teaches how to please teacher, avoid work, fit in with peer groups etc. In the workplace, we do not know enough about the ways in which type (i) and type (ii) learning interact.

(iii) The planned learning to do that which has not been done before.

One key element in workplace learning is the need to plan to learn new things. Yet, where this is explicitly examined in the literature, it is often described as the management of innovation or change, rather than learning. We have not found much research that focuses explicitly on how this type of planned new learning is done, for individuals or groups. Engestrom (eg Engestrom & Engestrom, 2000) gets closest, using activity workshops to construct and lead such planned learning. But what happens in situations where his team is not on hand?

(iv) The unplanned learning of that which has not been done before.

This happens when we deal with new challenges as an on-going part of our everyday lives. Sometimes, the answers may be known by others, but the learner behaves as if they were not. In other cases, the problem being addressed is unique – perhaps because of the particular setting in which it is encountered. Schon (1983) has something to say here at the level of the individual practitioner, through his conceptions of reflecting in and on action. But his work has been widely criticised and more thinking is needed. Only Engestrom and other activity theorists address this problem at a group level, but the models they use seem a little rigid.

Even though the boundaries between these four types of learning are imprecise, it is unlikely that one meta-theory could adequately cover them all. Yet most workplace learning contexts involve most of them.

The research projects

In exploring the nature of work-based learning and the incentives and barriers to its effective development, we identified five troubled sites for workplace learning in the UK. That is, locations where workplace learning is not straight forward and problems are known to exist. The sites were selected through a pragmatic combination of access and research interest. Each is approached as one or more case studies. We next briefly describe the focus of each project.

1. Regulatory structures and access to learning: Case studies in social care and cleaning services

Helen Rainbird, University College Northampton, and Anne Munro, Napier University.

This project examines sectors of the economy characterised by low paid jobs which have been socially constructed as requiring low levels of formal qualification. Similar types of work and jobs will be examined under different regulatory frameworks in the public sector, the private sector, and the private sector under sub-contract to the public sector. The project will examine the ways in which the broader regulation of the employment relationship (including wages and conditions, the presence of trade unions, access to formal training and job design) are related to investment in formal learning and forms of work organisation which are more or less conducive to informal learning.

(a) The relationship between pay and formal learning

To what extent does low pay result in employers constructing jobs so as to decrease skill content and, by doing so, decrease the opportunities for informal learning as well? To what extent does higher pay result in greater incentives to the employer to make labour more productive through training, thus increasing the skill content of jobs and creating more opportunities for informal learning? The project will examine the impact of the new UK minimum wage and exemptions to it, and other aspects of the employment relationship which affect access to training, such as insecure contracts and part-time hours.

(b) The relationship between trade union presence and training

A strong positive correlation between trade union presence and work-related training has been established (Green, et al., 1995; Arulampalam and Booth, 1998), and in recent years trade union interest in training has grown. However, the precise role that unions play is unclear. The impact of union recognition and forms of consultation and involvement on training will be assessed in different workplace environments.

(c) The influence of national standards and statutory requirements on formal learning

Governments have at their disposal a number of tools for influencing training provision. Statutory requirements are the strongest of these, such as those concerning health and safety. The UK government is encouraging the adoption of various voluntary standards. This study will explore differences in the extent to which managers have adopted them, and the impact that this has on learning opportunities.

(d) The workplace as a community of practice and opportunities for informal learning

In order to explore informal opportunities for learning, we will examine the social organisation of work and work groups. Changes in the nature of work may affect learning opportunities positively or negatively. Forms of generic working, breaking down the traditional lines of demarcation between tasks, may be perceived as creating more varied and interesting work, or as work intensification and an imposition. The extent to which changes in the nature of work are formally recognised by managers may be dependent on whether new skills are learnt informally from other workers or through formal training programmes (Rainbird, 1988). Moreover, these sectors are dependent on women's tacit skills, which are often unacknowledged by managers. Even in jobs which are categorised as requiring little skill, workers may reskill their jobs autonomously (Rainbird, 1988).

2. Recognition of tacit skills and knowledge in work re-entry

Karen Evans and Bettina Hoffmann, London Institute of Education

This project focuses on tacit skills and knowledge learned through life and work experience and how capabilities underpinned by this knowledge and skill are recognised, developed and deployed in re-entry to the labour market.

The research will explore and compare the tacit skills and knowledge of women and men seeking work re-entry after periods of interruption to their occupational 'careers'. It will identify (a) their awareness of these attributes, the degree to which they make use of them in their learning processes and the self-assurance they draw from them; and (b) how far and in what ways the tacit dimensions of knowledge and skill are recognised, interpreted and taken up by employers and in work environments.

Previous work on workplace learning and on work re-entry courses suggests that a spiral of learning takes place as what is implicit is made explicit then built upon and expanded by further learning (Brown and Evans, 1994). Molander (1992) argues that there is no knowledge which is totally tacit and none without at least some tacit aspect.

The research will investigate the part played by tacit skills in the education, training and work re-entry of two groups: (a) workers of both sexes with a more or less continuous occupational biography (without many interruptions) participating in CVT programmes to increase their mobility and improve their prospects of entry into new employment fields (ie threatened with redundancy etc.); (b) participants in work re-entry programmes trying to re-enter the labour market after substantial occupational career breaks, taken for family or related reasons.

3. The workplace as a site for learning: Opportunities and barriers in small and medium sized enterprises.

Lorna Unwin and Alison Fuller, University of Leicester

This project will explore the ways in which employees (apprentices and experienced workers), in small and medium sized enterprises in the steel industry, acquire knowledge, skills and understanding through workplace learning. In particular, the project will:

- (a) Examine the on-the-job development of Key Skills, skills which are of central importance in small enterprises which demand flexibility and adaptability from their employees in order to cope with diverse and unpredictable problems;
- (b) Explore the relevance of formal qualifications to workplace competence and the development of further learning for both mature workers and younger employees, specifically those on the Modern Apprenticeship.

The introduction of the Modern Apprenticeship in 1994 in the UK acknowledged that apprenticeship has been long seen to be an effective vehicle for the development and transference of occupational skills, knowledge and understanding (Fuller and Unwin, 1999). Traditional definitions of apprenticeship are, however, being severely tested by the changing conditions of contemporary workplaces. Ashton (1998) describes how the move towards more flexible organisational structures has broadened the work role giving cognitive skills, which increasingly need to be acquired on-the-job, greater importance.

The increasing emphasis on teamworking and multi-skilling requires that people learn from each other where and when necessary, acknowledging that skill formation is an on-going process. The capacity of mature workers to learn new skills and facilitate the learning of younger employees, including apprentices, may not be sufficient for the task. Many UK workers left school with few qualifications and started their working lives before the onset of the dramatic technological and cultural changes affecting contemporary workplaces, in the steel industry, as elsewhere (Fuller and Unwin, in press).

A mandatory part of the Modern Apprenticeship is that young people acquire Key Skills (in Communication, application of number, information technology, problem solving, working with others and improving one's own learning). Supporting young people, and mature workers in their development of such skills has significant implications for workplace learning, yet our understanding of this area is limited.

4. An exploration of the nature of apprenticeship in an advanced economy

Peter Senker, University College Northampton

If apprenticeship is defined as legitimate peripheral participation in communities of practice (Lave, 1991), it is a widespread phenomenon in modern economies, but is not referred to as such in all of its institutional formats. There appears to be a broad consensus in favour of training which combines practical learning in the workplace with formal learning in an educational institution. But this imposes contradictory demands on VET which is

supposed to encourage the acquisition of knowledge that is difficult to articulate and, at the same time, to allow individuals to acquire knowledge applicable to varied and rapidly changing work situations (Merle, 1994).

This project will explore such issues and contradictions in three different institutional settings:

- (i) Modern Apprentices in mechanical engineering firms. Modern Apprentices often acquire articulated knowledge through participation on Courses at Colleges of Further Education, as well as learning on the job.
- (ii) Teaching Company Associates in projects related to Information Technology. Teaching Company Associates are University graduates. They acquire further knowledge from the University Departments, which jointly supervise them in two-year industrial projects, and also attend courses.
- (iii) Care support workers entering employment in local Crossroads Caring for Carers schemes. These workers acquire articulated knowledge through brief training courses, but are generally rather isolated in their work. Often care support workers have little former employment experience of care/support work. The traits traditionally held to be typical in women such as caring disposition, helpfulness and ability to nurture are generally largely taken for granted (Fearfull, 1997). Arulampalam and Booth's (1998) analysis of the British Household Panel Survey showed that the probability of receiving training is relatively high in the non-profit-making ('charity') sector, an effect which they note has not been investigated before.

5. The school as a site for work-based learning

Phil Hodgkinson and Heather Hodgkinson, University of Leeds

Though there is much literature on Initial Teacher Education (ITE), teacher professionalism and the Continuing Professional Development (CPD) of teachers, it seldom connects with literature on work-based learning (but see Eraut, 1994). Yet much ITE and CPD increasingly take place within the school. Recent research suggests that the culture of the school and subject department are crucial influences on the learning and experiences of secondary ITE students (Hodgkinson and Hodgkinson, 1997, 1999). The significance of school culture for teacher development is already well known (Lacey, 1977; Clandinin and Connelly, 1996; Hargreaves, 1999; Korthagen and Kessels, 1999). Furthermore, within secondary schools, there are differences between departmental cultures (Ball, 1987), which have seldom been addressed in relation to teacher learning.

This research will examine the communities of practice in two secondary schools and four contrasting subject departments. Within those communities of practice, emphasis will be given to the relationships between informal and formal learning, and between tacit and discursive knowledge. The research will evaluate the relationship between cultural explanations of learning drawn from the work-based literature, and those drawn from teacher education. It will do this in the context of current predominantly top-down and prescriptive attempts to improve the quality of ITE and CPD. It will investigate the ways in which school and departmental culture and practices, combined with provision of formal training linked to the newly proposed pay and conditions of service for teachers, work to empower and/or deskill teachers.

Methodological challenges

In drawing this paper to a close, three methodological challenges are flagged. Firstly, discovering the nature of tacit knowledge, and of the informal learning that contributes to it, is notoriously difficult (Eraut, 1999). Each case study will approach this problem differently, using varying combinations of interviews, diaries, observations and group discussion. What all have in common is the opportunity to examine learning over a period of at least two years. This means that we will be able to monitor learning as it goes along, in addition to asking participants to reflect upon previous experiences. As we work with participants, their awareness of their own learning should increase, making the processes involved more visible, to them and to us. This means that the research will change the ways in which some participants learn. Such changes will be monitored, as best we can.

Secondly, a central concern of the ESRC's Teaching and Learning Research Programme is what constitutes effective learning, the extent to which it can be measured and how conditions supporting it can lead to improvement in learning outcomes. But there is no clear unambiguous view as to what 'good' informal learning looks like, against which our cases could be measured. Furthermore, the outcomes of such learning are difficult to predict, and we would expect them to vary from employer to employee, from person to person, from site to site, and from time to time. We wish to keep our research minds open about the probably contested nature of 'what counts'.

Finally, this is a network of five projects. Will it be possible to pull together the findings from these over-lapping studies into a whole that is greater than the sum of the parts? If so, how can that be done, and what are the factors and that will help or hinder that achievement? In this sense, we are subjects in our own study. How can we collectively learn those things that some already know but others do not, and those things that are new to all of us? What sort of community of practice will we develop into, and how will those communal practices, divisions of labour, rules, conflicts and relationships influence the success of the network? In other words, how effective will our own work-based learning be, and what will that tell future researchers and funders about the incentives and barriers towards effective, multi-project integration?

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REFLECTIONS ON EMPOWERMENT, WORKPLACE LANGUAGE AND LITERACY POLICY, AND PROFESSIONAL DEVELOPMENT IN ENGLAND

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Introduction

This paper aims to discuss political discourse, government policy, professional development and practitioner approaches to language and literacy provision in England. It examines the concept of powerful literacies (Lankshear 1997), and to what extent policy and professional development in England facilitate an empowering pedagogy in worker education. Since government policy differs in Scotland, Wales and Northern Ireland, the discussion will be contained to policies developed by the Department for Education and Employment [DfEE] for England, and to professional development and practice in England only.

The paper arose from my work at Lancaster University, within a development unit called the Workplace Basic Skills Network. This is a national, government funded organisation aimed at supporting providers and others to improve the quality and quantity of workplace "basic skills" (language, literacy and numeracy) provision. One of our key roles is to develop programmes through which practitioners can improve their professional qualifications in this field.

In 1999, in order to answer my own questions about why there seemed to be significant differences between pedagogical approaches in workplace language and literacy in New Zealand and the UK, I completed a small-scale study involving a total of sixty practitioners in these countries and in Australia (Holland, 1999). The study indicated that in each country, governments and leading language and literacy agencies have promoted versions of empowerment through literacy which are reflected in professional development and provision. These versions are similar in each country in many respects but also significantly different. I found that in New Zealand, where there was no language and literacy policy, the respondents tended to have an emancipatory view of literacy (Freire, 1972), little funding support, and little professional development in workplace provision. In Australia, a language and literacy policy had been established since 1991 and included at least some reference to critical awareness and cultural diversity. Funding support was strong, and professional development, available to post graduate level, not only focused on implementation but included critical reflection of practice. In the UK, where there has been only very recent attention given to building basic skills, new policy and funding initiatives have mushroomed in response but are more overtly economically focused than elsewhere. Professional development is unreflective in the main, and provision in the workplace is modeled on college and school.

In February 2000, I completed a commissioned study of the recruitment of 696 Oxfordshire manual workers to basic skills programmes (Holland, 2000). During my analysis of responses, I became interested in how far professional development might be a factor in the way these recruitment interviews and programmes are able to address the social aspects of language and literacy. Although it is beyond the scope of this paper to draw conclusions about worker empowerment, some observations will be made from this study.

The discussion in this paper will be underpinned by the following questions:

What is the political discourse around 'empowerment', and how does policy influence professional development perspectives in workplace basic skills?

Can professional development programmes in England enable practitioners themselves to become powerfully literate, i.e. within these programmes, can they engage in critical analysis of current practice, based on an awareness of theory derived from a range of perspectives and their own experience?

Can current workplace language and literacy policy and practice in England enable workers to become powerfully literate?

It is important to examine the range of views and practices in literacy which are claimed to promote empowerment. In the next section, I have outlined three modes of empowerment with examples of associated practices.

Powerful literacies

Lankshear (1997:79) asserts that 'empowerment' means all things to all people and that we need to get clear about what we mean. He poses three different modes of empowerment, claiming that not all are *powerful*. In the example below, 'empowerment' is the ability to perform discrete literacy related tasks.

Empowerment is the main issue. Confidence in abilities increases and [workers] become empowered to tackle literacy and other tasks that they felt unable to approach. (UK Practitioner, in Holland, 1999:60)

Mode A

The first mode Lankshear describes is where individuals are not aware of *how* they are powerful. For instance, as a young student, I was unaware of the cultural capital and relative power I possessed, and assumed my success was due to my hard work. The practitioner respondent in the example above believed that teaching discrete grammar skills, punctuation and vocabulary, and so on, would result in better opportunities for workers.

Mode B

The second mode is more conscious. Individuals will be aware of their relative power and how it can be used to advance themselves and/or others. There will be some meta-level understanding of literacy, and an element of analysis. As a young language teacher, I understood that my students, long term unemployed migrants, needed more than language skills. I understood that they needed an understanding of cultural and political factors surrounding language interactions at work, in the local community and in New Zealand society. I was able, to some extent, to help these learners to better manage interactions at work and in the community, but not to help them to critically reflect on the language and literacy requirements and issues they faced as migrant workers.

Mode C

The third mode of empowerment is when individuals are able to analyze and critique literacy practices, "in ways that promote a meta-level knowledge of these 'Discourses' (Gee 1991:10), and to transform them, by asking questions such as: "Why has this document been developed?" "How is this topic being written about" and "What other ways of writing about this topic are there?" (Kress, 1985:7). Thus the teacher is helping workers to develop a knowledge *about* what they are learning, as well as a knowledge *of* the language in question.

The mode of empowerment within practitioners' experience to is likely to have some influence on how they think about and assist workers to improve their language and literacy. Practitioners' approaches are discussed below.

Approaches

There are broad distinctions between approaches in the literature (Christie, 1995; Gowen, 1992; Hamilton, 1996, Holland 1998), which correlate loosely with modes of empowerment). Christie has labeled these approaches *functional-skills*, *personal development* and *critical-cultural* (Christie, 1991:8). A practitioner empowered as per Lankshear's mode A, then, is likely to favour a functional-skills approach to language and literacy. And so on.

The *functional-skills* approach emphasises the perceptual and technical procedures of decoding and encoding. It draws on cognitive and behavioral psychology. The *personal development* approach emphasises the private and personal, and access to a culture's literary heritage. It is associated with progressivism and natural activity-based learning conditions. The *critical-cultural* approach emphasises the cultural/community context of literacy and the importance of critical analysis. It states that much of what is learned about civic life is learned through literacy, and that cultural assumptions embedded in texts need to be critically examined.

Sheryl Gowen states that her critical-cultural *worker-centred approach* is:

...grounded in the cultural identity of the individual and work to develop literacy from within that location rather than imposing a set of external, objective strategies for acquiring and displaying

knowledge....[this approach] fits with a mode of production that emphasises redistributions of power in the decision making process through flattened hierarchies, work teams and participatory management (Gowen 1992:16-17)

It is useful at this point to look at Government policy, industry perspectives and professional development in England to locate which approach is currently considered 'best practice'.

The UK Government view of basic skills

In 1975-76 the government set up a resource agency for basic skills, the Adult Literacy and Basic Skills Unit (ALBSU), now known as the Basic Skills Agency (BSA). Its definition of language and literacy, widely accepted within government and post-16 education in the UK, is as follows:

...the ability to read, write and speak in English, and to use mathematics at a level necessary to function at work and in society in general. (Moser:1999:2)

Hamilton notes that a functional view of literacy, focused on social control and what adult *cannot* do, has been the predominant view in this country. She further observes that because arrangements for ESOL provision have been developed by the Home Office as a response to immigration, ABE has

...never fully engaged with issues concerning gender, class or cultural diversity in relation to literacy. Policy documents and practices have operated with an undifferentiated view of the typical ABE learner. (Hamilton et al:1999:)

Thus, pervading approaches to language and literacy tend to be functional, instrumental, and undifferentiated. The use of 'basic skills' as a term to capture these communicative practices reinforces a narrow, technical approach where discrete skills are separated by levels of competence and performance.

Although **workplace** basic skills programmes have been available (in geographical, and chronological patches) for nearly two decades, it has, until recently, only been supported through one-off initiatives and intermittent funding arrangements. Since 1997 workplace basic skills has been increasingly in the spotlight.

The New Labour government, coming to power on a platform of "education, education, education", commissioned several reports, such as the 1999 Moser Report *A Fresh Start: Improving Literacy and Numeracy*. In this and other reports, the need for basic skills provision is presented as an individual problem, created by inadequate school experiences or personal deficiencies. Moser recommendations resulted in the development of a National Adult Literacy Strategy to achieve a functional level of basic skills throughout the UK. The report states:

As part of the National Strategy, the government should commit itself to the virtual elimination of functional illiteracy and innumeracy. (Moser, 1999:85)

The government has acted quickly on the recommendations of the report. It is working to build capacity in a range of adult learning contexts including the workplace, to widen access and participation through funded initiatives and to raise basic skills levels. It is doing this through national education and training targets, new national standards for literacy and numeracy, a draft curriculum based on those standards, new standards for teaching and learning and national tests (DfEE, 2000:12). An ESOL curriculum has been developed separately. The national adult literacy and numeracy curriculum is modeled on the national curriculum for schools. In their response to a national consultation process on the new adult literacy and numeracy curriculum, the Research and Practice in Adult Literacy (RAPAL) group, based in Lancaster, states:

The model of literacy that underlies the document is not explicitly stated [but suggests] that skills can be defined as autonomous and detached from use...The focus on the micro-levels of language misses out some important areas, namely the social aspects of language, conflict and negotiation in language use, language as discourse and what we would term "critical language awareness"...The assumption of a linear curriculum into which adults' experience should be fitted is suggested by the use of "levels" throughout and we believe this is inappropriate. (RAPAL submission to Curriculum consultation, 2000)

While a vigorous crusade for workplace language and literacy provision is being undertaken, often with reference to 'empowerment', this is generally described in terms of functional competence, resulting in improved employability. Such a view is unsurprisingly in harmony with the version of empowerment promoted in industry management texts.

Industry perspectives on empowerment

It has been noted (Gee et al, 1996:29) that words such as 'empowerment' and 'liberation' have been quite deliberately used by industry (eg. in management texts) to grab our attention and alliance in an accelerated form of (fast) capitalist co-option. (Educators, however, are likely to understand these words as they were originally meant). Richard Edwards observes that the reality is that workers are most often 'empowered' only insofar as they consent to organisational goals:

For some [learning at work schemes] open up opportunities for employees and provide the basis for more interesting forms of work and ways of working. Employees are given more say and responsibility in their places of work. There is the possibility of mobility in the workplace. For others, such development signify and intensification of labour, increasing productivity to increase competitiveness, and an undermining of notion of the workforce having separate interests from those of their employers. In this sense, the discourse of learning organisations can be argued to govern practices of securing consent in line with the objectives or mission of the organisation (Marchington 1992), and of producing new workplace subjectivities more closely aligned to organisational imperatives. (Edwards, 1997:146)

Sheryl Gowen, too, found that, despite claims in total quality management texts that democratic workplaces were good for business, control and power generally remained at management level:

While management wants workers to become more 'empowered' to make decisions and solve problems, they generally still want ultimate control over the content of those decisions and solutions. So, the question they are really asking is: 'How do you 'empower' workers to increase their skills in order to increase corporate profits?' Rather than say, how do you 'empower' workers to increase their skills to reshape the distributions of power for a more democratic workplace? (Gowen, 1996:15)

In terms of literacy, schemes are encouraged which increase individual employability and business competitiveness. The expectation is that this can be done through raising the level of functional literacy of the workforce. Yet such government and industry solutions are incongruent with espoused total quality management goals (Peters, 1994) which claim to value people who can think independently, who can innovate, and who can challenge old ways of doing things.

The workplace basic skills practitioner is required to take all stakeholder perspectives (these include government policy, employers, workers and unions) into account in developing provision. S/he will be influenced by the requirement that s/he take account of national targets (for achieving a functional level of literacy), the national adult literacy, numeracy and ESOL curricula, and new national adult basic skills standards as well as production and learning priorities of industry. S/he will also be influenced by his/her own philosophy of practice resulting from life and work experiences, formal and informal professional development, and by his/her employing education institution. I will now discuss how practitioners' approaches are influenced by policy, the circumstances of their employment and professional development opportunities that these allow.

Workplace professional development for practitioners in England

According to Hamilton practitioners drawn into adult basic education in the UK have tended historically to be:

...people with a commitment to the emancipatory potential of adult literacy. Their focus was not just on community development but social change. (Hamilton, 1999:251)

Practitioners and others involved in education in England have expressed relief at the new attention given by the incoming Labour government to adult basic education. However, nearly two decades of a conservative political discourse seem to have eroded a social change perspective. Statements by English practitioners in the 1999

comparative study revealed a common belief that basic skills provision should focus on individual personal development to fit learners for a traditional education, while at the same time meeting production demands of industry and funding requirements of government. These beliefs reflect the views and practices of basic skills leading basic skills agencies and employing provider organisations.

Workplace basic skills providers (usually further education colleges) commonly employ adult basic skills practitioners without providing any professional development other than the initial teaching courses designed by the BSA, and nationally accredited by City and Guilds. The standard basic skills teaching qualification for part time post-16 teachers is 'The Certificate in Teaching Basic Skills', generally known by its scheme number, '9285'. This course covers all the practical elements of basic skills delivery in a college or community setting. Although it is currently under review, the course does not encourage any analysis or critique of concepts, theories and principles related to practice in basic skills and nor any specific guidance on workplace basic skills provision. (Gity & Guilds 1994)

In this route to professional development there is no opportunity for basic skills practitioners to critically reflect on their approach to teaching either in colleges or in the new context of the workplace. They are mainly employed in a part-time capacity, and may be recruited on a paid or voluntary basis. UK practitioners surveyed and interviewed in my comparative study had gained basic skills qualifications primarily through these accredited courses, which provided them with effective skills for the transmission of technical literacy competence but not with any opportunity to critique underpinning concepts, theories and principles related to practice. Workplace practitioners' responses indicated that they generally carried over their teaching practice from a college environment to workplace provision.

Like college provision, workplace basic skills programmes in England are generally designed to address perceived individual learning deficits within a traditional education framework. Workplace courses are short, isolated from other training within the organisation, and often off-site, in colleges. Curricula focus on the building of discrete skills, rather than on literacy as social practice. (Barton & Hamilton, 1998:6-7)

Until 1996, there was no specific *workplace* basic skills training for practitioners. Currently only the Workplace Basic Skills Network at Lancaster University provides professional development programmes which foster critically reflective practice in workplace basic skills.

Since workplace basic skills provision is not a large part of adult education activity as yet, the overwhelming majority of practitioners are part time. They may not be able to access any employer funded workplace basic skills professional development, as their colleges often cannot afford the additional costs to staff development for this specialisation. Thus practitioners are under-prepared for workplace basic skills provision and overwhelmed by government and institutional constraints.

Empowering Workers

In February 2000, I completed a study for Brookes University in Oxford designed to draw conclusions about what would motivate workers to learn. The study explored aspirations, progression pathways and potential of 696 Oxfordshire manual workers' who responded to basic skills recruitment interviews between 1997 and 1999. Among other things, the survey and subsequent interviews revealed that the basic skills provision was designed specifically to address individual needs in basic skills, to progress learners to further education, and to support the regional economic strategy through workforce development.

Workers were interviewed at recruitment and 25 were interviewed about their learning experience again in January/February 2000. At recruitment, workers were given good opportunities to voice their interests and concerns with questions such as "Is there any work related training you would like to do now?", "Is there anything that would make your job more rewarding?" and "Is there any other education you would be interested in?". Many workers showed an acute awareness that improved performance was contingent on a number of other industrial and other issues which were seen as beyond their control. These factors included, pay, conditions, recognition and two-way communication with management. Some examples of comments include:

"We need clearer communication, instruction manuals are not up to standard"

"My management skills, aptitude and potential are not being made use of"

"They never really tell you what to do to get up the ladder. There is no sort of rules to tell you what sort of rules you need for each job."

Applicants were then selected into a range of courses from foundation to level 2 language, literacy and numeracy. Several of those interviewed after their courses had finished reported positive outcomes reflecting an improved capacity to move forward: better performance on the job, educational progression and promotion. Thus, according to government and industry indicators, these workers were empowered.

It was beyond the scope of the study to explore whether any discussion, reflection and critical analysis of workplace language and literacy practices and issues was built into the learning programme. For example, we do not know whether workers were invited to reflect on and discuss why and how instruction manuals were "not up to standard" and how they might be different. Responses to questions about experiences of provision do not suggest that such an approach was taken.

A Move in a Positive Direction

In discussing evidence of professional capability, Micheal Eraut notes that the professional should be able to indicate

...a knowledge base that will serve as a foundation for future practice. This can range from knowledge about techniques to a critical understanding of the concepts, theories and principles which underpin current practice; so that they can understand the significance of innovations and properly evaluate their work. (Eraut,2000:204)

The Further Education National Training Organisation (FENTO) standards for Teaching and Learning offer the first promise of government funded guidelines which emphasise the importance of practitioners' use of critical faculties.

FENTO was established in 1999 and one of its first major tasks, resulting from the Moser report, was to work with the BSA to produce new qualifications for teaching basic skills to adults. This year FENTO produced a set of Standards for Teaching and Supporting Learning in further education in England and Wales. Although designed for the full range of teachers in further education, these standards also apply to basic skills practitioners.

Values informing the standards are listed as reflective practice and scholarship, collegiality and collaboration, the centrality of learning and learner autonomy, and entitlement, equality and inclusiveness (FENTO:2000) Throughout the document, it is emphasised that practitioners need to have a critical understanding and essential knowledge of good practice in a range of teaching and learning circumstances. Moreover, practitioners are required to reflect upon and evaluate their own performance and professional practice.

These values, and the emphasis on critically reflective practice, at one time a strong feature of adult basic education philosophy and provision, seem to have been absent for some years now in professional development for basic skills practitioners in England.

Conclusion

I have discussed the concept of empowerment and powerful literacies, outlined different modes of empowerment experienced by practitioners and described how each mode can impact on their pedagogical approach. I have reviewed government policy in relation to language and literacy in further education colleges, the community and the workplace, and shown how it is focused on skills which enable people to function at a basic level in society. I have demonstrated that most current provision of professional development shows little evidence of a valuing of critical reflection of concepts, theories and principles underpinning practice. Government policy, lead bodies and professional development programmes have limited the extent to which practitioners can become powerfully literate themselves and thus the extent to which they can promote powerful literacies in worker education.

Using an example from a recent study of workers' recruitment to basic skills programmes, I have indicated how limited government, industry and institutional interpretations of literacy may be limiting worker empowerment.

An instrumental, skills based, deficit view of literacy has constrained practice in England. Further, the undifferentiated view of the worker/ learner, disregarding socio-cultural and political factors and focusing instead on boosting individual cognitive levels across the nation, has facilitated the development of national standards, a national curriculum, testing etc. This continuous barrage of government directives hinder critical reflection, and the part time and voluntary nature of employment reduces opportunities for formal and informal professional development. The 'buy in' has been almost total.

To develop professionally, practitioners need to be aware of the range of interpretations of empowerment in policy and professional development and to consider these interpretations in relation to different pedagogical approaches. We need to provide opportunities for practitioners to critically reflect on concepts, theories and practice so that they are not only able to implement, but to shape policy. Given the large numbers of part time practitioners, colleges need to support them through paid time to learn. When practitioners get this level of professional support, they will at least be able to meet the standards for teaching and learning set out by FENTO, and at best, become powerfully literate people, able to develop a pedagogy that offers the same opportunities for workers.

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ENABLING PRODUCTIVE LEARNING AT WORK: DEVELOPING 'SERVICE, PROFESSIONALISM AND ENTERPRISE'

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Introduction: The case for generic skills at work

No-one is likely to dispute that generic skills and lifelong learning are part of the policy agenda for higher education in Australia. The reasons are not difficult to trace. Globalisation, competition policy, and microelectronic technology now influence all forms of production, including the production of knowledge whether through institutional settings, informal situations or in the workplace. Indeed for employees and employers alike, knowledge formation and knowledge distribution have become the most leveraged forms of production. As a result workplaces have become 'learning places'. The focus is no longer only on entry level knowledge and skills but also on the capacity to continue to learn irrespective of the role or contextual setting. This means that more rather than less importance is being placed by employers on generic skills and attributes, particularly those that facilitate on-going learning and can be transferred from one context to another.

Learning for life - lifelong learning is no longer just about alternative pathways or adult education. In our view it is about reflective practice, continuing education and skills upgrading as part of managing a 'portfolio' career. We suggest that this is the case not just for novice professionals, as recent graduates might be described, but also for more experienced managers and leaders. On this basis we expect that enabling productive learning at work is an important, if not always explicit, agenda for enterprises and organisations, as it is a necessary condition for success in business and human development terms. The fastest growing sector of the workforce is the service sector, and the most highly sought after workers have become 'knowledge workers'. The emergence of this group of symbolic analysts is further evidence of the value of broadly based attributes such as critical thinking and analytical skills, capacity to solve problems and be creative. Even if we can accept that there is broad agreement that generic skills are important for success at work, there is not necessarily agreement between relevant stakeholders such as educators, employers and professional associations about which set of generic skills are the most appropriate for graduates to acquire, the best way to embed such skills in degree level programs or the nature of the relationship between generic skills and lifelong learning.

This paper draws on work in progress at Edith Cowan University (ECU), our workplace. We and others are considering these questions in the context of our attempt to differentiate our profile in line with our Strategic Plan, which has as its defining themes: 'service, professionalism and enterprise'. We are engaged in a project to identify graduate attributes that are seen as desirable and promote a stronger relationship between degree level study, undergraduate education in particular, and the future development of our graduates, including their employment and learning futures. At the heart of the ECU project, known internally with a deliberate show of optimism as 'Gateway' (Graduate Attributes in Tertiary Education: Workplace Advantages for You), is our belief that degree level programs must provide sufficient opportunities for students to develop attributes which are of a generic nature as well as those that are specific, being derived from a discipline or area of scholarship.

We are aware, of course, that generic skills such as reflecting on practice and adapting to change are of relevance to us in our own work as educators and leaders within the University. Our prime interest, however, stems from our understanding that generic skills are increasingly a focus for employers. Contact with our alumni tells us, anecdotally at least, that a range of social and cognitive attributes which are generic in nature are often the basis for making crucial distinctions between otherwise able graduates, whether they are being considered for selection at the recruitment stage, or in terms of promotion once in the workplace. Making such distinctions are reasonable actions by employers if, as we suggest, broadly based knowledge and skills, including skills that enable learning, are critical for success at work. We assume that employers perceive that there is a connection between productive work and productive learning. We explore more fully what employers say they want in terms of generic skills and graduate attributes in the next section. The Gateway project is identifying an appropriate set of generic attributes and the options available to us in aligning the set with the strategic directions of ECU as a whole. Our ultimate aim, like others undertaking similar work elsewhere in the university sector, is to do a better job of embedding generic skills in all our major award courses at the undergraduate level in the first instance. Since the release of the Mayer Report (Mayer, 1992) some work has been under way in respect of generic skills in parts of the vocational sector (Moy, 1999). More recently the debate which raged in *Campus Review* earlier this year about 'Training Packages' has been an argument about whether this new version of competency-based education and training has the capacity to promote sufficient breadth to facilitate the development of the essential underpinning

knowledge and skills, or if it is merely about the acquisition of specific vocational skills. Our view on this controversial and as yet unresolved issue is that it depends on the particular vocational tradition in question - it is a different situation, for example, in a field such as 'Children's Studies' than it is for one of the trade dominated fields like 'Metal and Engineering'. There are different pedagogic and epistemological assumptions about knowledge formation which influence the assumptions and common understandings that can be taken as the starting point for curriculum development. As cross-sectoral linkages increase more note will need to be taken of these issues as TAFE graduates seek credit in undergraduate degree programs at University.

It is our expectation that an important way to enable more productive learning to occur at work is to improve the extent to which graduates enter the workforce with breadth as well as depth. By this we mean having a range of generic skills, including the skills to be able to go on learning and to be able in ECU terms to 'be of service, act professionally, and display enterprise'. Following our summary of what employers say they want, we will share our analysis to date in terms of lessons learned at ECU and outline our change management strategy, including processes for engagement with stakeholders internal to the University and those that are external. Finally we indicate the implications of our approach for further research work.

Generic skills and graduate attributes : What employers want

The focus on generic skills and graduate attributes is not new. Since its inception in 1990, the Business Higher Education Round Table (BHERT), for example, an influential forum and source of policy advice, has been commissioning relevant research. Indeed its mission, which is to improve the performance of both business and higher education through better understanding of and closer relationships between the sectors for the benefit of Australian society (BHERT, 1993, p ix) provides a catalyst for continuing interest in these matters. Key research questions which have been pursued have included the ability of the education and training sectors to meet the requirements of employers. For example, in 1993 BHERT published *Graduating to the Workplace* which outlined the desired characteristics of graduates from secondary and university education from the perspective of employers. *Identifying Future Leaders* was a BHERT study released in 1995 of the career progression and development of graduates in their first ten years of employment. Surveys and interviews involving both graduates and human resource professionals were used to identify and rank sets of skills perceived to be 'predictors of success'. As with their earlier commissioned reports this one clearly established the importance for career success of the generic attributes such as communicating, thinking, coping with change, information processing, decision-making, interpersonal skills and motivational qualities. Furthermore, it is these generic skills which consistently emerged as more important than professional knowledge and its application, or business knowledge and skills, even though the general importance of these more specific skills was also confirmed (BHERT, 1995, p xviii).

An earlier Federal government commissioned study chaired by Eric Mayer, then the President of BHERT, examined the development of generic skills in secondary schooling and the relationship between generic skills and employment outcomes for school leavers (Moy, 1999). The report concluded that generic skills were valuable in facilitating the transition from school to work for secondary graduates as well as in laying the foundation for further study in the vocational or higher education sectors. Despite debate around the use of the term 'key competencies' and whether other attributes such as 'cultural understanding' (Misko, 1995) should be included, broad agreement emerged that these kind of skills are of importance. The initial set 'analytical skills, communication skills, team skills, problem solving, using technology, mathematical skills, and planning and organising activities' continue to be highlighted in different ways and included in curriculum development frameworks for the compulsory years of secondary schooling, although particular approaches vary according to the legislative basis and pedagogical orientation of the respective curriculum and assessment State authorities.

Currently there is strong interest from Business and University leaders in generic skills and lifelong learning. Following the BHERT sponsored Higher Education Ministerial Summit on 17 November 1999 which was organised around three themes - the global imperative, a learning society - a vital partnership, and a genus and species, BHERT established a number of taskforces. Each one is to examine a particular issue of interest to the Minister and provide a position paper, giving options for addressing the issue. Two are of relevance here: the taskforce on *Generic Skills* and the taskforce on *The Critical Importance of Lifelong Learning* (BHERT, 2000). The findings from these taskforces will no doubt raise issues for further debate and can be expected to highlight current examples of the ways that generic skills are being incorporated into higher education courses, and work-based learning strategies, together with case studies that feature business/higher education initiatives with an explicit learning focus.

So we can be confident that employers and educators will continue to look for ways of enhancing graduate attributes, particularly generic skills. However, what does research tell us about how well we are doing?

DETYA commissioned research into the satisfaction of employers with the skills of new graduates is the most recent comprehensive attempt to answer this question. Results from a questionnaire mailed to over two thousand employers in Australia indicate that 'creativity and flair, enthusiasm, the capacity for independent and critical thinking, and flexibility and adaptability', are most valued by employers. 'Academic' learning ranked tenth of the list of twenty-five skills and attributes (DETYA, 2000, pp14-15). On the question of satisfaction *per se*, while the overall performance of new graduates from the perspective of employers appears to be reasonable, a large proportion of job applicants are nevertheless considered unsuitable. The greatest skill deficiencies were perceived to be 'creativity and flair, oral business communications and problem solving'. However, the skill that most differentiates graduates is the 'capacity for independent and critical thinking' (DETYA, 2000, p viii).

Leaving aside the philosophical considerations which immediately arise with such 'skill talk', namely the extent to which broad capabilities whether socially or cognitively derived can be demonstrated on the basis of public performances, in our view the legitimate concerns of employers about the quality of graduates is the basis for the strength of the employer voice. This voice is increasingly influencing policy decisions impacting on the higher education sector. Given this situation we suggest that until more employers and professional associations are confident in the quality of graduates there will continue to be a lobby for more industry-based and 'market' driven influences on academic profiles (teaching and research), funding and related issues in higher education.

Hager (1997) in a review of learning in the workplace identified the growing dissatisfaction by employers with courses for the professions. Front end formal courses and programs as entry to a career are now seen as merely the necessary preparation or foundation for the early years of practice for novice professionals. The expansion and greater regulation of processes for continuing professional education through professional associations are one response to this situation. Now a lifetime of practice means a lifetime of learning. Furthermore, attributes which have been identified as characterising the lifelong learner – an inquiring mind, helicopter vision, information literacy, a sense of personal agency, a repertoire of learning skills and interpersonal skills and group membership (Candy, 2000, p11), rely in turn on generic skills. Employer perceptions undoubtedly reflect the impact of economic and technological change on the nature of work and the new forms of work organisations. Learning in the workplace has become an agenda at the enterprise level.

Embedding generic skills: Lessons learned at ECU

At ECU the impetus for the Gateway project is derived from two sources. On the one hand, there is the imperative to gain market advantage for the University through better differentiation of our profile and a more strategic focus using our defining themes of service, professionalism and enterprise. On the other, there is our desire to improve the employability of our graduates by providing clearer information about their generic attributes on completion. The framework for the proposal gained broad support because it was consistent with the then ECU Teaching Management Plan and built on previous projects in relation to Generic Skills and Modularisation, and Work-Based University Learning which had been undertaken using seed funding as 'Strategic Initiatives'. A third and more recent initiative to develop a Second Transcript has been integrated into the overall framework. Overall, the Gateway framework is designed to progress the University's strategic emphasis on service, professionalism and enterprise through consistent and complementary development of a range of initiatives managed on a project basis.

Our starting point was to look more closely at the attributes which ECU seeks to promote in its graduates as set out in the *Edith Cowan University Strategic Plan 1998-2002*. Relevant statements of intent are as follows:

- Edith Cowan University graduates will be characterised by their commitment to providing quality service in their chosen field and their ability to work collaboratively and productively with a diverse range of people.
- They will be committed to continuing education, training and self-improvement and high standards of professional behaviour.
- They will display enterprise and initiative, possess an international outlook and actively contribute to the development of a culture which values service, professionalism and enterprise.
- Edith Cowan University will provide a learning environment that has high intellectual and creative standards, encourages engagement with the professions, and develops students' capacity to contribute to their local, national and global communities.

- Edith Cowan University graduates can expect their university experience to build life-long learning skills including communication, creativity, independence, teamwork, problem solving, decision making, the ability to use technology, and awareness of political, social and ethical issues.
- Edith Cowan University programs will emphasise cultural inclusivity, flexibility, relevance, currency and a concern for the needs of the learner.
- Through our degree programs, students will develop the knowledge, skills and values which will enable them to become accomplished practitioners and leaders in their chosen professions. (Edith Cowan University, 1998)

Not surprisingly, this is a comprehensive list of attributes all of which are generic in character. The scheme proposed to make sense of these attributes is outlined in the next section. Here it is sufficient to note that the overall characteristics by which we hope to distinguish ECU graduates are: being able to be of service, knowing how to act as a professional and displaying enterprise.

From the beginning, to focus debate and manage the change agenda in curriculum, program delivery and professional development terms, a double tiered approach to graduate attributes was adopted for the Gateway project. The first tier includes generic attributes of relevance to all graduates. The second tier is specific to scholarship areas and allows for the richness of diversity amongst different professions. The assumptions underpinning the Gateway project and the consequent expected outcomes include:

- ECU degree programs provide opportunities for students to develop attributes of both a generic and a specific nature which are of relevance to employers.
- These attributes are developed through university-based and work-based learning experiences.
- Graduating students will be provided with two transcripts: one will provide information on units studied and grades achieved in those units, the second will provide complementary information on generic attributes.
- Course accreditation, teaching and assessment policies will be modified to accommodate this new form of reporting.
- Marketing and enrolment practices will reflect the changes in reporting.
- A professional development strategy will be developed to support implementation of the changes. (Edith Cowan University, 2000, p3-4)

The implementation issues which arise in achieving these outcomes will be discussed in the next section. Here we outline the lessons we have learned at ECU from our efforts to embed generic skills in undergraduate programs including deployment of work-based learning experiences. Perhaps because of our long tradition at ECU of being an institution with a focus on teaching and learning we have many academics who rightly assume that students' learning is enhanced by a focus on 'learning skills'. For example Chalmers and Fuller, reporting on an experimental study at ECU, indicate that students who were taught learning strategies in the context of their regular coursework used them effectively and achieved better results than students who were taught in the conventional way (Chalmers & Fuller, 1999, p28). Accordingly and in line with the lessons learned by our colleagues this is the curriculum model we have adopted for the Gateway project.

To date there have been a number of strategies employed at ECU to embed generic skills in undergraduate programs. We report on three: professional development programs for teacher education, an internship program, and a sandwich program in the Bachelor of Social Science. ECU includes an extended teaching practice in its Bachelor of Education programs. The purpose of this professional practice and development program is to provide student teachers with more extensive pre-service experience in their intended workplaces, which at least in the first instance is the classrooms of Western Australia. Since 1997, students have been asked to rate themselves in terms of the effectiveness of the program on a four point scale (1: not effective to 4: very effective) for twenty eight items. There are questions on the effectiveness of the practicum program in contributing to the development of generic skills such as interpersonal skills, communication skills, and problem solving as well as contextualised questions on flexibility and critical reflection. Other questions are about the effectiveness of the supervision they receive, sensitivity to individual and cultural differences, and opportunities for putting theory into practice. In addition there are global questions about the contribution to confidence, competence and preparation of future teaching situations. Each year the majority of items have had a mean score of 3 or greater (Leggett, 2000). Items relating to the development of generic attributes of relevance to teaching as a practice which have been consistently rated highly (more than 3) over the period 1997-1999 include: 'communication skills', 'interpersonal skills', 'critical reflective capacity', 'management skills (classroom)' and 'confidence' in and 'commitment' to teaching. These results are good news for the program coordinators and more importantly probably indicate that learning in context on-the-job in classrooms is a necessary way to develop the requisite

portfolio of skills for successful teaching. Of course these skills are generic in character so another lesson we have learned which we expect to apply in many professional fields in addition to teaching is that to become a competent professional requires practice in the workplace, particularly opportunities for extended reflection if productive work is to be the eventual outcome.

Another form of extended practice now in place for selected students in teacher education programs is an Internship program. This began on a pilot basis in 1999, principally for secondary students in their last semester of teacher education. After completion of their final, ten week practicum very able students were offered the opportunity to take an internship for two terms - effectively this was an early appointment - with complementary study requirements. In partnership with the Education Department of Western Australia (EDWA) the internships were offered to high achievers, especially in areas of teacher shortage. In 1999 seventeen secondary and two primary students completed their degrees through an internship. A measure of success of the program is the high appointment rate in 2000 for the graduates who completed internships. Of the first cohort one hundred percent were re-employed by EDWA. At the time of writing a second cohort of thirty-one students are undertaking an internship - seventeen in secondary schools and fourteen in primary schools. This new model of professional development for final year students has received unanimous support from the students, principals and academic staff involved. Entries in diaries kept by interns contain comments such as, 'Not only did I gain experience professionally, I also developed as a person and became more confident in my dealings with students and fellow teachers' (Campus Review, 2000). The lesson learned here then is that prospective employers have a vested interest in contributing to the skills and competencies of prospective professional employees and that if this interest can be appropriately harnessed then richer and more realistic learning opportunities can be provided for students which are likely to enhance the development of the broadly based generic skills.

In our Bachelor of Social Science program students have the opportunity to participate in a sandwich program by completing professional development consisting of either twenty four weeks of voluntary work for three days per week or twenty eight weeks of paid employment for four days a week. This program effectively constitutes a two unit elective. Students are expected to negotiate a professional development plan, keep a placement diary, develop a skills profile, submit a final written report and evaluation. The program handbook (Formentin, 1998, p5) identifies a number of advantages and expected outcomes from the program. These can be summed up as: 'self-managed learning generates excitement about learning and engenders increased self-esteem and personal satisfaction', 'new methods of learning' will allow the development of 'work competencies', and 'practical learning' encourages a better understanding of future 'professional role' in the workplace. The generic skills which are expected to be developed through the program include written and oral communication skills, planning, and time management, problem solving, team skills, decision making and delegation. At this stage the formal evaluation of the program is still being completed so it is too early to detail results. However, early indicators are positive. One indicator of its success is the commitment by employers to continue to support the program on an ongoing basis. Another is that the program is to be expanded from its initial start as part of the Bachelor of Social Science and offered more widely within the university community. The lesson we have learned so far is that the process of finding a suitable employment placement and negotiating terms and conditions to ensure that professional development can occur is itself a very useful learning experience which hones and develops generic job related skills, including oral and written communication skills, planning and organising activities and decision making.

Next Steps: Refining, Redesigning and Reporting

Further refinements to the Gateway Project are underway. Decisions are being made as to which alternative for linking generic skills to the University's defining themes of service, professionalism and enterprise best fulfils the parallel needs of the students and the university. One option structures the generic skills in a traditional manner and provides a matrix for mapping these skills against the defining themes. A second option organises the generic skills around the defining themes, clustering skills in a manner which reinforces and is reinforced by the ethos of the university. Our preference is for this latter option as the better way to promote the inter-relationship of higher order skills and avoid the dangers of itemised lists of specific skills. The full implementation of the Gateway project will require the support of stakeholder groups within the university. The curriculum development process will need to be redesigned to reflect outcomes rather than inputs, with course and unit outlines overtly identifying generic skills at each level of operation. We already have examples of this process, with course consultative committees playing a key role, insisting that certain generic skills are embedded in their programs. Planning for teaching and learning will need to identify and capitalise on opportunities for skill development in the context of particular units. Student assessment will need to be modified to provide the relevant data for a second transcript so that information on generic skills can be recorded in valid and reliable ways. Recognition of prior learning processes will need to be redefined and become more reliant on holistic forms of assessment. Academic staff will require mentoring in order to

become comfortable with a different approach to traditional forms of undergraduate education. And students will need to understand and embrace the changes: their potential as agents of change should not be underestimated.

Assessment and certification provide leverage for change. A new reporting framework has the potential to make a significant contribution to the change process as well as to the fundamental issue of communicating student outcomes. Techniques for distinguishing outcomes demonstrated and assessed in the work place are being considered to further emphasise the importance of, and give status to these sites of learning. Further input from stakeholder groups external to the university will be needed to ensure that the form and content of the second transcript enables it to fulfil its promise as an effective communication tool.

The solution to the challenge of 'How to enable productive learning at work?' lies in the way graduates are prepared for their professional roles: specifically, the extent to which they are given structured work based learning experiences and other opportunities to develop the generic skills which are critical to lifelong learning including learning on-the-job. We proceed with optimism!

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LEARNING THROUGH WORKING: VIEWS OF MANAGERS AND PERSONNEL

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Introduction

The past decade has seen education and training policies of governments in Australia increasingly acknowledge that formal courses delivered by education institutions are not the only effective way that people learn for work, or even, perhaps, the main way. Policy for the recognition of prior learning by individuals has been one manifestation; provision for registration of firms, across all industry sectors, as industry based providers of training has been another.

Educators in institutions employing traditional, class-room based, teaching methods have been able to draw on a substantial body of knowledge about teaching and learning, the roots of which go back centuries. But managers in industry and the educationists to whom they might look for support, have had less to go on, if and when they plan for the development of their human resources. Training Packages give guidance on learning outcomes as competencies, and, in some cases, suggested strategies. But working is more than acting out competencies from an industry Training Package, which, by its very nature, constitutes external, codified, context-free knowledge.

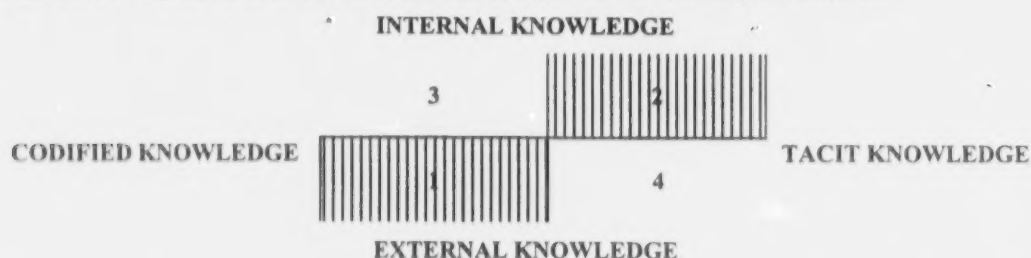
Forms of knowledge important to an enterprise

The distinctions between, on the one hand, tacit and codified knowledge, and on the other, knowledge that is external or internal to an enterprise, are important.

Specifically, technological knowledge as it is generated and used by firms, draws upon four different forms of knowledge and four distinct processes. It is useful to distinguish the relevant forms of knowledge along two axes: tacit or codified and internal or external (to each firm). Internal tacit knowledge is generated by means of processes of learning by doing and learning by using. External tacit knowledge is acquired through informal exchanges and socialisation, which enables the internalisation of the technological externalities spilling over in the technological and regional innovation systems in which each firm operates. Internal codified knowledge is the result of formal activities and R&D. Finally, external codified knowledge is acquired by the recombination of bits of technical information which are reorganised and applied to different contexts from those originally conceived...(Antonelli 1999)

Tacit and codified, external and internal knowledge also include the non-technological knowledge that firms depend on - the laws and regulations which govern them, the expectations of the community with respect to corporate behaviour in their region, interpersonal knowledge, market knowledge and so on. Figure 1 diagrammatically represents the four forms of knowledge as required by an enterprise. External (to the enterprise), codified knowledge (Area 1), is knowledge that can exist in written form, and in which form it is devoid of a specific context. It is commonly in the public domain. The contents of a set of equipment manuals or government regulations constitute external codified knowledge, and the greater part of the knowledge with which educational systems have traditionally been concerned has been of this type. Contrasting with external, codified knowledge is internal, tacit knowledge (Area 2). This is knowledge in action that cannot be fully represented by the written or spoken word. It is acquired and generated through experience, familiarity and/or practice—it must be lived. Knowledge of the culture of one's workplace is of this form; there are some aspects which symbols can represent but there are others that defy codification. The expert operator of a complex piece of equipment also has this sort of knowledge—about the equipment in its particular physical and human setting, its particular applications and idiosyncrasies, and the 'how to' knowledge like that required for riding a bicycle, which comes only with practice. Area 3 represents codified, internal knowledge. The symbols representing the knowledge refer to the particular enterprise, they cannot be applied to another without substantial modification. A factory layout map or business plan represent internal, codified knowledge. Opposite it, is external (to the enterprise), tacit knowledge (Area 4). Some such knowledge, like another firm's knowledge derived from experience of its technologies, may be similar to internal, technological knowledge except that 'it's out there'. Other external, tacit knowledge may have the potential to be codified, but because it is innovative, this has yet to occur.

Figure 1: A Diagram of Four Forms of Knowledge upon which an Enterprise Depends



Organisational knowledge

Organisational knowledge resides in Areas 2 and 3, but if it underpins a client-responsive and innovative business, it is in a process of continuous evaluation, regeneration and reapplication. This involves appraisal of external knowledge (Areas 1 and 4) and transformation of what is seen as valuable or important into internal knowledge—what it means for the organisation. Organisational knowledge can also benefit from the diversity of perceptions within the enterprise. The creation of organisational knowledge “is not dependent on achieving consensus in various perspectives, but...focuses on generating and understanding different interpretations” (Hine and Goul 1998). As Sandberg (2000) has expressed it, drawing on the work of writers such as Polanyi, Giddens and Schön, “As workers frame their work, the attributes used in performing that work are not separate from their experience of it, but internally related to work through their way of framing the specific work situation.” Hence, within an enterprise which is committed to maximising its effective use of organisational knowledge, that knowledge is in a continuous process of renewal, through critical interaction with its environment, local and global, and interplay with the changing skills and understandings of individuals within. The alternative is knowledge stagnation. That is, organisational knowledge is the result of the learning of the people within the organisation.

To a significant extent, the learning that takes place depends on decisions of management, which in turn depend on beliefs about the cost-effectiveness and practicability of different strategies. We have sought to investigate what strategies key decision-makers in Australian enterprises believe to be the appropriate ones for their organisations, and have examined our findings in relation to the model in Figure 1. We have also compared manager views of appropriate strategies, with the views of workers on the floor about their own learning, taking into account their educational backgrounds.

A project funded during the years 1998-2000 by the National Research and Evaluation Committee, primarily concerned with testing a method for linking training investment by firms and their labour productivity, provided an opportunity for us to carry out the investigation.

We found that managers saw a broad range of learning strategies as appropriate for their enterprises. Implementation would mean that all four forms of knowledge, tacit and codified internal knowledge, and tacit and codified external knowledge, would be addressed. However, acquisition of the latter two forms was generally viewed as the preserve of management. Appropriate strategies for learning by non-management personnel, and in particular, operatives, were essentially confined to those that would, almost exclusively, address internal knowledge. Possible consequences for organisational learning and business performance are discussed.

Method

The project involved undertaking case studies in thirty enterprises across four quite different industry sub-sectors—footwear manufacture, wire products manufacture, the accommodation sections of four and five star hotels, and supermarkets that were stores of two major chains. The studies involved all states of Australia and enterprises were located in cities or their surrounding areas.

Sub-sectors and enterprises were selected in consultation with national Industry Training Advisory Bodies. Two or three days were usually spent on site with those firms for which agreement to participate had been gained, during which time, managers were interviewed and work observed. Interviews were loosely structured so as to gain answers to preset questions whilst also facilitating the garnering of the non-anticipated. Questions regarding learning, human resource recruitment and development were typically addressed to general managers (store managers in supermarkets) or human resource managers. One set of questions sought their beliefs on the most effective strategies for their personnel to learn their jobs. We used

the term 'training' to refer to any act for the purposes of learning for work. We were keen to avoid the assumption that we were interested in only formal courses or structured learning, so this was stressed in discussion. Nevertheless, we wished to distinguish between formal and informal strategies. It quickly became apparent that preferred strategies did not fall neatly into one or the other type; rather, they were formalised to various degrees. We therefore, for the purposes of the research, defined a strategy as formal if it had all three of the following characteristics:

- designed for the purposes of achieving particular learning outcomes
- checking that the intended learning outcomes had been achieved
- achievement recorded in some form.

We termed as non-formal, those strategies that had only two or less of the characteristics.

Questions divided training into formal on-the-job, non-formal on-the-job, formal off-the-job and non-formal off-the-job. We asked managers to answer with respect to learning strategies for the management level, the supervisory and/or technician level, and the operative level. Furthermore, they were asked to indicate which sorts of training they saw as essential, and which they saw as important but not essential. Prompting in regard to particular forms of training was avoided. Through open-ended questions we also sought information on what managers saw as their firm's strengths and weaknesses and what needed to change. Following the writing up of collected information, the drafts were returned to the respective enterprises for validation.

Except for one wire products manufacturer and one hotel, voluntary, anonymous questionnaires, along with prepaid, return envelopes, were accepted for distribution to floor level personnel—those concerned directly in the manufacturing or service delivery process. Given that we wished to maximise the likelihood that people with fairly basic English language or literacy skills would be able to respond, we tried to keep the style and words as simple as possible, consistent with the need for certain information. One of the questions sought to find out how each worker thought he/she had learnt his/her present job; another asked about the level of secondary schooling or equivalent that had been successfully completed.

Analyses of the findings and their limitations

The approach we employed has a number of limitations. We did not ask managers "What is your strategy for organisational learning?" Such an approach would have been unhelpful and could even have prevented further communication. This is terminology that most of the managers we interviewed never used nor had a common understanding of. Instead we sought information about what managers believed to be effective training for their personnel. This did not necessarily accord with what had actually taken place. In fact, in many instances, because the manager was fairly new to the firm or position, he/she did not know what training strategies had been in place in previous years, and seldom were there records other than financial ones.

Another limitation pertains to the use of case studies. Case studies on site have the advantage of delivering large quantities of information at the individual firm level, but do not permit large samples. In this research, too, there has probably been a self selection tendency such that the investigated enterprises were more committed to training than were managers across all the enterprises in their respective sub-sectors. So special care needs to be exercised in drawing any inferences about Australian firms in general.

When we looked at the collected opinions of managers, it was soon apparent that the categories we had employed for questioning, whilst seemingly having been effective in gaining feedback, were not helpful in showing up any trends. We therefore examined the gathered information to see if it could be brought together in a more informative way. Sources of training seemed to fall into eight clusters:

- formal courses delivering a qualification under the Australian Qualifications Framework (AQF)
- equipment supplier briefings
- conferences, seminars, trade fairs, professional association activities and networks
- meetings of personnel within the firm
- private reading of journals, newspapers, books etc.
- formal (which might or might not be a component of a course under the AQF) and non-formal short courses delivered by the enterprise or by an external provider
- visits to other enterprises, within Australia and/or overseas
- productive work; this included working with and without mentors, observing others in their day to day work, and on-the-job induction.

It was decided to refer to 'AQF' courses rather than 'award' courses or 'nationally recognised' courses, as we have found that the latter terms lead to misunderstandings. ('Awards' are commonly given to personnel for outstanding performance in various aspects of the workplace, which can include training. Some firm level—non-AQF—courses are 'nationally recognised' by others in the sub-sector as constituting valuable training.)

It would have been constructive for the personnel questionnaire to have, in some way, mimicked the eight clusters. However, this was not the case as it was prepared prior to the case studies being undertaken. Fortunately, the form of the set of questions about learning was sufficiently similar to allow some comparisons to be undertaken. Those who responded were, as a group, more heterogeneous than had been sought. That is, some responses appear to have been from people other than floor-level personnel. Response rates were also very variable—from six percent to 97 percent. Percentage support for each statement in the questionnaire, for each enterprise, was calculated; equal weighting was given to each enterprise by tabulating the averages of these for each sub-sector, along with the highest and lowest values.

The particular circumstances applying to the findings for supermarkets make them rather different to the rest. It proved impracticable to distinguish clearly between the training strategies for department managers and operatives, and so manager opinions on them were lumped together. It was found that

- store managers had little influence over training policy, it being determined by head offices
- department (grocery, deli etc.) managers to date have worked more as operative-level supervisors than as managers
- a clearer division in training arrangements has existed between temporary personnel and permanent personnel on the floor, than between operatives and department managers.

Findings

Table 1 shows that managers saw learning at their level as depending on a multiplicity of strategies. For each sub-sector, strategies were nominated that fell into six or more of the clusters. In footwear manufacture, learning through work, preferably under the guidance of a mentor, was seen as essential or important in all instances. Conferences, seminars and the like were essential or important in most cases for wire products. In the two service sub-sectors, there was consensus that visits to other enterprises were important or essential. For store managers in supermarkets, degree and/or post degree courses were essential or important.

Table 1: Learning by Managers: opinions of senior managers*

	AQF courses	Briefing s by supplier	Conferences and networks #	Internal meetings	Private reading	Short courses	Visits	Work ##
Footwear manufacture (N=7)	4 (1,3)	0 (0,0)	4 (4,0)	0 (0,0)	4 (3,1)	5 (1,5)	3 (2,1)	7 (5,2)
Wire products manufacture (N=7)	2 (1,1)	1 (0,1)	5 (2,3)	2 (2,0)	2 (2,0)	3 (1,2)	3 (3,0)	2 (0,2)
4-5 ☆ Hotels (accommodation) (N=8)	5 (3,2)	0 (0,0)	2 (1,1)	4 (1,3)	3 (0,3)	7 (5,2)	3 (0,3)	5 (2,3)
Supermarkets (N=8)	8 (3,5)	0 (0,0)	1 (1,0)	5 (1,4)	4 (1,3)	4 (2,2)	8 (2,6)	5 (2,3)

Figures are numbers of enterprises: totals (essential to learning, important source of learning).

* For details see text. # 'Conferences and networks' include seminars, trade fairs, professional association activities. ## 'Work' includes informal, on-the-job induction, day to day working, work observation.

Table 2: Learning by Supervisors/Technicians: opinions of senior managers*

	AQF courses	Briefings by supplier	Conferences and networks #	Internal meetings	Private reading	Short courses	Visits	Work ##
Footwear manufacture (N=7)	5 (2,3)	1 (0,1)	1 (0,1)	1 (0,1)	0 (0,0)	6 (0,6)	1 (0,1)	7 (6,1)
Wire products manufacture (N=7)	1 (0,1)	0 (0,0)	1 (0,1)	3 (2,1)	0 (0,0)	7 (4,3)	1 (1,0)	5 (3,2)
4-5 ☆ Hotels (accommodation) (N=8)	4 (4,0)	0 (0,0)	1 (0,1)	3 (3,0)	0 (0,0)	6 (5,1)	0 (0,0)	8 (4,4)

Figures are numbers of enterprises: totals (essential to learning, important source of learning).

* For details see text. # 'Conferences and networks' include seminars, trade fairs, professional association activities. ## 'Work' includes informal, on-the-job induction, day to day working, work observation.

Table 2, on the other hand, indicates that learning through working and short courses (in, for example, supervision, leadership, training, quality management) were by far the most frequently mentioned sources of learning for supervisors and technicians. Courses under the AQF rated fairly highly in footwear manufacture and hotels, but not in wire products manufacture.

Managers' perceptions of the relative importance of forms of training for operatives are given in Table 3. It shows that, for almost all interviewed managers in hotels and the two manufacturing sub-sectors, learning through working, short courses and AQF courses were judged to be all that was required for effective learning by operatives. Indeed, learning through working was viewed as either essential or important by all but one interviewee, with the great majority viewing learning through working as essential. A somewhat similar pattern applied for supermarkets. However, whilst AQF courses were strongly supported by store managers, in reality these were provided only for personnel with permanency. Training of casuals was limited to in-house short courses and learning on-the-job. Meetings rated highly with store managers too, but here the reality was that meetings were used for day-to-day direction-giving rather than more enduring learning.

Table 3: Operative Learning: opinions of senior managers*

	AQF courses	Briefings by supplier	Conferences and networks #	Internal meetings	Private reading	Short courses	Visits	Work ##
Footwear manufacture (N=7)	6 (3,3)	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)	3 (0,3)	0 (0,0)	6 (5,1)
Wire products manufacture (N=7)	4 (1,3)	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)	7 (5,2)	1 (0,1)	7 (5,2)
4-5 ☆ Hotels (accommodation) (N=8)	4 (4,0)	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)	6 (3,3)	0 (0,0)	8 (4,4)
Supermarkets (N=8)	8 (4,4)	0 (0,0)	0 (0,0)	6 (0,6)	0 (0,0)	1 (1,0)	0 (0,0)	8 (6,2)

Figures are numbers of enterprises: totals (essential to learning, important source of learning).

* For details see text. # 'Conferences and networks' include seminars, trade fairs, professional association activities. ## 'Work' includes informal, on-the-job induction, day to day working, work observation.

The AQF courses that were seen as valuable for operative personnel were usually at AQF Level II and, in some instances, at Level III. Courses at Levels IV to VI, or modules from them, were more likely to be viewed as having a place at supervisory and technician level or in the early years of management. Those courses at AQF Levels II, III and IV that were thought essential or important, were ones that resulted from customisation of national industry standards. The same commonly applied to courses at AQF Levels V and VI. We found a high level of conviction that Training Packages are a useful resource, as long as they are used selectively and flexibly. There was less expressed concern that Bachelor and higher degree courses undertaken by managers be customised to the particular circumstances of the firm, although some of the managers interviewed did indicate a preference for that.

Table 4 shows that, for wire products manufacture, hotels and supermarkets, each of the secondary education profiles were similar, with approximately half of personnel having completed Year 12 schooling or equivalent. However, only about a quarter of people in footwear manufacturers appeared to have achieved this level. These differences do not seem to have been as a consequence of differences in the hierarchical level of people responding to the questionnaire. Information sought on the nature of the current job suggested that, for almost all of the enterprises, more than 70 percent of responses were from floor level personnel (for details see Maglen, Hopkins and Burke 2000).

Table 4: Highest Level of Secondary Education Completed: personnel questionnaire responses

	Footwear manufacture (7 enterprises)	Wire products manufacture (6 enterprises)	4-5 ☆ Hotels accommodation (7 enterprises)	Supermarkets (8 enterprises)
Year 9 or less, or equivalent	32% (17%-49%)	15% (5%-24%)	13% (7%-30%)	8% (0%-17%)
Year 10 or equivalent	27% (15%-49%)	21% (6%-43%)	13% (6%-30%)	26% (4%-43%)
Year 11 or equivalent	17% (11%-32%)	15% (10%-42%)	17% (8%-26%)	20% (16%-35%)
Year 12 or equivalent	24% (15-41%)	49% (37%-75%)	57% (35%-63%)	46% (21%-61%)

Figures are means of percentage responses for each enterprise with ranges in brackets.

Table 5: Ways that Personnel Learnt Current Job: questionnaire responses

	Footwear manufacture (7 enterprises)	Wire products manufacture (6 enterprises)	4-5 ☆ Hotels accommodation (7 enterprises)	Supermarkets (8 enterprises)
Having the work explained by another person	78% (67%-97%)	77% (64%-100%)	83% (71%-94)	92% (86%-97%)
Being shown by another person	88% (75%-97%)	78% (67%-95%)	88% (80%-92%)	93% (80%-100%)
Reading manuals or watching videos	17% (7%-33%)	31% (8%-58%)	29% (17%-40%)	76% (61%-100%)
Courses have undertaken	12% (6%-18%)	30% (13%-50%)	39% (26%-58%)	20% (14%-32%)
Classes run by the firm	10% (5%-15%)	17% (0%-43%)	23% (10%-36%)	31% (0%-49%)
Classes outside the firm	7% (5%-15%)	16% (3%-29%)	16% (4%-33%)	9% (0%-16%)
Via a computer (packages, distance learning, internet etc)	3% (0%-8%)	13% (0%-43%)	15% (3%-29%)	4% (0%-10%)
Seminars and conferences	6% (0%-23%)	14% (0%-32%)	16% (8%-28%)	11% (0%-29%)

Figures are means of percentage responses for each enterprise with ranges in brackets. Category 'Other with explanation' has not been tabulated due to very few entries.

The relative importance that personnel attached to different ways of learning to do their current job is indicated in Table 5. Regardless of the sub-sector, 'having the work explained by another person' and 'being shown by another person' were thought to be important by most personnel. For many, these explanations and demonstrations were the only ways nominated. The minor contribution of courses and classes indicates that the explanations and demonstrations have taken place fairly informally whilst working. For the footwear

sub-sector, no other ways of learning appear to have been important, except perhaps for a small minority. For the other three sub-sectors, manuals, videos, classes and courses appear to have contributed more significantly. Whilst 'other' has not been tabulated because of so few entries, it is interesting to note that the few there were, typically claimed 'taught myself' or 'trial and error'.

Implications for organisational knowledge

Each of the eight categories of learning strategies nominated by managers is concerned with the acquisition and/or generation of knowledge in one or more of the four forms—codified external knowledge (1), tacit internal knowledge (2), codified internal knowledge (3) and tacit external knowledge (4). For each strategy we chose the form(s) of knowledge that we considered to be the main one(s) addressed. Figure 2 shows the results of this process. Recruitment, although not a focus of this paper, was added, because some of the firms looked to it as another means of acquiring external knowledge. Indeed, amongst hotel managers this was viewed as an important strategy, as keeping *au fait* with the service innovations of competitors was a priority, and the mobile workforce that characterises this sub-sector was seen as an important source of information.

Figure 2 implies that, collectively, managers were looking to employ a diversity of learning strategies that, if implemented, would address the four forms of knowledge represented by the model. However, examination of findings at the individual enterprise level, has revealed that only about half of the managers mentioned strategies that collectively would address all four forms of knowledge.

Figure 2: A Workplace Learning Strategies Model

INTERNAL KNOWLEDGE	
Customised AQF courses Internal short and other courses Meetings Explanation	Learning as trial and error Mentoring Watching others Demonstration with explanation Meetings
CODIFIED KNOWLEDGE	TACIT KNOWLEDGE
External short courses Private reading Bachelor and higher degree courses (Training Packages*)	Conferences, seminars, professional association activities Networking Visits Supplier briefings Recruitment
EXTERNAL KNOWLEDGE	

*Training Packages were seldom used in this form, rather, listed competencies were used selectively and customised.

The strategies that were mentioned by managers as essential or important for learning by operatives are almost all concerned with internal knowledge—the upper half of Figure 2. In most instances, the same applies for learning strategies by supervisors and/or technicians. Externally provided short courses had a place, but the preference was for short courses addressing specific, internal issues. When firms availed themselves of non-customised courses for personnel, it appeared to be mainly for cost reasons rather than the broader understandings they might deliver.

The preference for customisation of Training Packages under New Apprenticeships extended to all aspects of the curriculum; workplace delivery was seen as enabling both off-the-job and on-the-job teaching to focus on the particular practices of the enterprise. Notwithstanding, there were instances found where employees were attending an education provider, such as TAFE, to study an AQF course, and where they were being exposed to a much higher proportion of external knowledge. Typically, in these circumstances, the employee was undertaking a traditional trade course (for example, tool making, fitting and machining, butchery, bakery).

The predominant view of managers, that on-the-job training—where learning is facilitated by a fellow worker—is the major source of learning for work below management level, appears to have been supported by the opinions of personnel themselves, the great majority of whom saw learning in this way to have been effective. Billet (1998) noted, with respect to Australian workplaces, '(P)articipating in everyday activities in the workplace has the potential to be a rich source of the knowledge required for workplace performance.'

In contrast, the preferred learning strategies for managers included ones that would address external knowledge—the lower half of Figure 2. It seems that the acquisition of external knowledge, whether tacit or codified, is viewed by management as its own preserve.

Given that the process of ongoing transformation of external knowledge into internal knowledge is fundamental to the currency of organisational knowledge, managers would have the responsibility falling on very few shoulders. Yet education levels of employees suggest that there were many who were capable of contributing in this way. And, as we have reported elsewhere, personnel were largely excluded from the creative process (Hopkins and Maglen 1999). Consistently, with a few exceptions in the manufacturing sub-sectors, there was seldom mention made by managers of how learning could be shared and how greater understanding of others' perspectives could be facilitated—or even that these were issues. Bhatt (2000) writes, with reference to the work of Nanaka, that managers must “facilitate the process of interactions between organizational members and make them sensitive to environmental stimuli so that individual knowledge in organizations is amplified and internalized to contribute to [its] organizational knowledge base.” The intellectual ability of employees in the majority of enterprises we studied appears to have been an under-utilised resource!

It is a truism to say that it is the quality and application of organisational knowledge of Australian firms that is a key to their competitiveness in an increasingly global economy, and that, in turn, this affects the standard of living of all of us. If the quality and application of organisational knowledge are unaffected by segregation in its acquisition and generation then, from a firm perspective, the situation preferred by managers in the enterprises we investigated may be an efficient one. On the other hand, if such segregation is inimical to optimising the continuous generation and application of organisational knowledge, then business performance may be suffering as a consequence, with implications for us all. Of course, all personnel live and learn in the world external to the firm, and bring some, at least, of that learning to their workplaces. But whether it contributes positively to organisational knowledge is another matter!

A commonly accepted definition of a learning organisation is that of Pedler, Burgoyne and Boydell (1991), viz. A learning organisation is “one which facilitates the learning of all its members and continuously transforms itself”. Assuming this implies an inclusive and collaborative approach to knowledge generation, it seems that the firms in our research were not so much ‘learning organisations’, as ‘learning management units’ in control of personnel who performed their own tasks competently. The latter, however, were excluded from the larger pool of organisational knowledge.

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THE SUPERVISOR AND FACILITATION

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The suggestion that workplace supervisors should become facilitators of the learning of staff is prevalent in the workplace learning and learning organisation literatures. However, the traditions of adult education conceive facilitation differently, and each makes different assumptions about the facilitation role, the learner, the ethical context and the degree of interpersonal interaction involved. Workplaces also differ in the demands they make on supervisors and staff and in the extent to which they issues of power and hierarchy dominate over values of participation and integration. This paper arises from a study of the role of workplace supervisors in the learning of staff. The empirical phase of the study revealed a disjunction between the participants' developing workplace identities and their sense of themselves as whole persons, and discovered a fundamental concern to build and save face for their workplace identities.

A trial-based model of trust building was employed to explore the participants' experiences of trust at work. The burden of trust was found to be asymmetrical, with the fundamental burden falling on the supervisor who needs to be able to trust each staff member to perform, and with staff having to prove their trustworthiness. In most facilitative relationships the burden of trust falls on the learner, with the facilitator needing to prove trustworthy.

In the empirical phase the supervisors were found to be highly influential of the direction and approach to learning of their staff, but they had only indirect involvement in the learning processes that were involved. In most cases they were actively excluded from involvement in these processes by staff. The possibility for supervisory facilitation for each of the traditions of adult education is then reconsidered. This concluding analysis draws on the central issues already identified: workplace identity and the demands of face building and saving, trust building and betrayal, and ethics. Some broader implications for concepts such as the 'learning organisation' for peer coaching, and for teacher-student relationships in higher education are drawn.

The vision for supervisors as facilitators

The suggestion that organisations should concern themselves with learning as a fundamental priority, and that in order to support this reorientation, workplace supervisors should act as facilitators of the learning of staff is prevalent in the literatures that focus on workplace learning and the learning organisation:

...an organisation that values individual and group learning as highly as any other aspect of the productive process, that is as conscious of learning as it is 'cost conscious' or 'quality conscious'. (Kornbluh & Greene, 1989: 258)

"Leader as teacher" is not about "teaching" people how to achieve their vision. It is about fostering learning, for everyone. (Senge, 1990: 356)

This teaching role of leaders makes every manager a human resource developer, a popular proposal among management-based HRD programs. (Watkins, 1991: 252)

Managers in the new knowledge economy are teachers and facilitators who don't control workers but liberate them. This is a fundamental reshaping of the traditional managerial prerogative of giving orders. To be a coach, teacher and mentor means creating a nourishing environment for personal growth. (Crawford, 1991: 126)

The manager or supervisor has a key role in helping subordinates work through this process of reflection. You may need gently to encourage them to think about the situation by asking appropriate questions or by allowing them to explain their understanding to you. (Oates, 1993: 113)

...the traditional role of supervisor has had to change... in a considerable number of enterprises, the role of supervisor has been retained, but with new emphasis on facilitation rather than authority. ...The new role of supervisor puts much more emphasis on facilitating and coaching within a team-environment. Critical questioning is crucial. So is helping team members learn from their mistakes. (Field & Ford, 1995: 86 & 88)

These visions are dramatically different to the traditional supervisor's role. The shift that is heralded is generally seen as an abandonment of coercion and authority, and the assumption of a more personal relationship built on trust.

This vision clearly accords with management desires for supervisors and staff. Some authors above clearly think that it is already a part of the prevailing reality of corporate life. How this vision might be seen from the point of view of employees, or how it might fit with the traditional approaches to adult education is less clear. These questions were the focus of the research that gave rise to this paper.

Facilitation in the traditions of adult education

Boud (1989) has described four traditions in the adult learning literature. The traditions build upon each other so that each adds new dimensions to the work of facilitation. They conceive facilitation differently, and each makes different assumptions about the role of the facilitator, the nature of the learner, the ethical context, and the degree of interpersonal interaction involved. In most practical education programs, elements drawing on more than one tradition will be found.

Facilitation in the tradition of training and efficiency in learning

This is the tradition of formal learning and systematic education in which aims and objectives are clearly specified, programs are designed taking into account the learners' prior knowledge and skills, the programs are tested and the design adjusted in light of the feedback obtained. The influence of behaviourism is clearly discernible in the emphasis placed on practice and feedback, and in the lack of interest in the learner as a whole person. Indeed this tradition is not truly adult-centred. Many of its assumptions apply equally well to children and animals. It coheres well with the instrumental character of the workplace and it is highly influential in the practice of human resource development.

Boud has highlighted the emphasis this tradition places on predicting and responding to the full range of learner responses, and the role of feedback on performance (Boud, 1989: 41). This tradition is the least interested in the interpersonal relationships, including power relationships, between the learners and their teachers or trainers. It tends to stereotype learners and to address them only through their needs, which are usually, even best, pre-identified and conceived as 'skill-gaps'.

Facilitation is not really a central concept here. Trainers are required to be skilled in training techniques, in needs analysis, program design and the provision of feedback. There is an implicit assumption of hierarchy: the trainer has some authority or power over the trainees. Only low level demands are made on their interpersonal, negotiation, and dialogic skills, with the consequence that training is a rather impersonal activity. The trainer becomes a replaceable functionary.

Facilitation in the tradition of self-directed learning and andragogy

This tradition is most closely associated with the United States and with the work of Malcolm Knowles. One of the thrusts of Knowles' work can be seen as an attempt to andragogise the workplace training and development practices derived from the training tradition. The tradition focuses on the unique goals and interests of learners as adults, and accords these a central place in the educational process. Boud notes the role of the facilitator in providing support to the learner through all aspects of the process of learning, and he highlights the learning contract as the most common device used. This suggestion parallels the use of contracts in performance management (see for example Onsman, 1991: 82ff).

The andragogical tradition is concerned to facilitate the achievement of the adult state and to encourage learning within it. While focused on the needs of the adult learner, it is still fundamentally concerned with the role of the facilitator. When he considers environments that may be said to be conducive to learning, Knowles draws on a notion of democracy:

In effect, an educative environment—at least in a democratic culture—is one that exemplifies democratic values, that practices a democratic philosophy....
(Knowles, 1990: 100-101)

In summary, facilitation in this tradition is more concerned with interaction with the individual learner and with addressing his or her individual learning needs, than is facilitation in the training tradition. However the emphasis is on negotiation and support, not on intervention in the processes of learning. The discipline specific expertise of the facilitator is less important than it is for the training tradition, and the responsibility for learning is significantly shifted to the learner.

Facilitation in the tradition of learner-centred education and the humanistic educators

This tradition recognises the situation of the individual within a group setting, and it addresses a broader range of personal and social needs. It grew out of the therapeutic practices of psychologists and Boud notes the emphasis on involving the whole person with the aim of liberating them "from their inner compulsions and inappropriate behaviour" (Boud, 1989: 42). The workplace learning literature often draws on this tradition in its discussions of the need for the transformation of personal perspectives, and of the empowerment of individuals in the workplace.

Heron in particular goes beyond the andragogical tradition in his concern for the values, feelings and spiritual dimensions of the whole person. His accounts share an underlying concern for the development of the autonomy of adults and for progress towards a democratic milieu. The strong affirmation of a voluntary principle allows Heron to commit to the principles of democracy, while at the same time according ultimate authority to the facilitator.

Boud, another figure in this tradition, has worked extensively on the role of experience in learning, and with Nod Miller, on the issue of facilitation. Boud and Miller have identified in the literature some principles behind good learning strategies for use with adults:

- exploration of personal experience is validated
 - a holistic view is advocated
 - there is seen to be no division between the personal and the theoretical or academic
 - the creation of a safe learning climate with a non-judgemental stance on experience is seen as important
 - activities are designed to build self-esteem and a sense of personal responsibility for learning
 - links are made between the learner's experience and that of others
 - learners are encouraged to act as animators
- (Boud & Miller, 1996: 22)

The commitment to individual autonomy, respect for persons and democracy is less overt here, but a little analysis suggests it is clearly present.

Facilitation in this tradition addresses the whole person of the learner, including their intellectual, affective, physical and even spiritual dimensions. Facilitative actions may need to be taken without the explicit consent of the learner, as is the case with Heron's confronting and cathartic interventions:

Confronting is about consciousness raising, about waking people up to what it is they are not aware of in themselves that is critical for their own well-being and the well-being of others. This makes confronting interventions presumptuous: I presume to judge what it is that you are not aware of; I presume to judge that it would be in your interests to become aware of it; and then on an unsolicited basis I presume to appoint myself as the one to raise your consciousness about the matter. (Heron, 1990: 44)

The humanist facilitator assumes a high level of responsibility and is fully committed to act in the interests of the learner alone. This makes the fundamental values that Heron acknowledges as underlying his approach—values of love, impartiality and respect for persons—highly significant.

Facilitation in the tradition of critical pedagogy and social action

This tradition emphasises the social, cultural and political context of learning and is focused on facilitation to help learners transcend the constraints they face in the world. It has strong links with action research approaches and is influential in management development. One of the main tools for facilitation is an open and critical dialogue between and with learners.

Postmodern approaches can be seen as an extension of, or perhaps as breaking with but building on, this tradition. This might perhaps be controversial. *Prima facie* it is justifiable on the grounds that the overriding concern here is for critique, and the postmoderns make this concern emblematic. However the categorisation is also justified by the focus on facilitation. The implications for facilitation that arise from postmodern critiques are almost identical to those from the tradition of critical pedagogy.

I group Brookfield, Hart and Usher within the spectrum of the critical tradition. Brookfield underlines the strongly democratic flavour of his approach by casting facilitation as a dialogue among equals:

In an effective teaching-learning transaction all participants learn, no one member is regarded as having a monopoly on insight, and dissension and criticism are regarded as inevitable and desirable elements of the process. (Brookfield, 1986: 24)

In this dialogue, the facilitator and the learner offer a rational critique of the each other's beliefs and actions, regardless of what these are. Adult education in this tradition is therefore concerned with the promotion of critical thinking and critique, not just with the learning of skills, knowledge and attitudes.

Hart rarely discusses the practicalities of facilitation, but when she does, she expresses familiar concerns. In the course of a discussion of consciousness raising groups in the women's movement, she articulates the main principles and characteristics of facilitation within this context:

- Acknowledgment of oppression
 - The importance of personal experience
 - The homogeneity of the learning group: there should be a shared interest in liberation and a lack of hierarchy. The facilitator cannot represent the oppressor. These elements enable trust and suggest a democratic mode of operation.
 - Equality
 - Gaining and sustaining theoretical distance
- (summarised from Hart, 1990: 58-67)

In this we can again discern, I suggest, a commitment to democracy, individual autonomy and self-direction, now understood to have an essentially political dimension. A few years later Brookfield also suggests that a reinterpretation of self-direction as an inherently political concept would be productive (Brookfield, 1993).

Another author who takes up the concerns of the tradition of critical pedagogy and social action, this time from a postmodern perspective, is Robin Usher (1995). He offers several critiques of the role and concept of experience employed in the humanist tradition, and of autonomy and the 'confessional practices' which lie at the heart of that tradition's view of the facilitative process. Yet they conclude that:

We would want to stress that we value much of the practices of guidance and counselling that have developed in the field of adult learning and would wish to see more comprehensive and extensive provision than is currently possible.
(Usher, 1995: 22)

Here again the practical import of the critique for facilitation is minimal at most. The main concern seems to more theoretical than practical. Usher calls for an alternative discourse that doesn't build the concept of facilitation on the ground of a rejection of teaching, nor on the ground of a fear of external sources of influence on the inner self. But the immediate import for facilitation is unclear. However, in discussing the discomforting nature of reading a challenging text, Usher describes a mechanism of facilitation that would be easily understood within the humanist or critical traditions:

...this disconfirmation and change in understanding did not come from my direct experience but from 'outside' it. Had I remained 'inside' my experience, I would not have had the interpretive resources, the Rogers text, to disconfirm what my experience seemed to tell me about experience. I realized that I had been so immersed that I could not see what I was immersed in. I needed something outside, something other, and for me this other was a written text. In engaging with Roger's text, my pre-understandings were confronted, challenged and eventually changed. (Usher, 1993: 177)

This description, with the replacement of the presence of a text with that of a facilitator, could almost have been described by Brookfield, Boud, or Heron. It is noteworthy for its insistence on the need for external intervention, from textual or other sources, for learning to be possible. Usher offers no account of the potency of the text for changing understandings—the reader may choose a less challenging interpretation. In the end therefore, Usher promotes an interventionist approach to facilitation, rather like Brookfield's skeptical and challenging facilitator.

Facilitation in the critical tradition is less willing to accept hierarchy and to grant authority to the facilitator than is the case with the humanist and andragogical traditions. The approach is generally the most democratic of all the traditions, with dialogue being the preferred facilitative approach. In the transactional encounter or critical facilitative dialogue, all participants are considered to be equal and all are considered to be learners. It is possible to discern a trend towards increasing intervention in the development of this tradition. Thus Hart

and Usher seem to support a more interventionist approach to facilitation, in the pursuit of the liberation of the learner, than Brookfield perhaps would.

The fundamental concern for democracy that the adult-centred traditions of adult education exhibit has ethical implications that are best captured by Kant, who first elaborated the ethics of democratic communities. Kantian ethics envisage a participative and democratic social order that respects the autonomy of the individual. So too, I argue, do the fundamental concerns of adult education commit it to promote participative democracy as a form of socio-political organisation appropriate to the development and sustenance of autonomous adults.

Pateman has described the educational import of participation in a democratic process:

The theory of participatory democracy is built round the central assertion that individuals and their institutions cannot be considered in isolation from one another. The existence of representative institutions at national level is not sufficient for democracy; for maximum participation by all the people at that level, socialisation, or 'social training', for democracy must take place in other spheres in order that the necessary individual attitudes and psychological qualities can be developed. This development takes place through the process of participation itself. The major function of participation in the theory of participatory democracy is therefore an educative one, educative in the very widest sense, including both the psychological aspect and the gaining of practice in democratic skills and procedures. (Pateman, 1970: 42-43)

Boud and Millers description of 'climates conducive to learning'—'micro-cultures' is the term they use—emphasises shared values, the establishment of local rules and norms, the need to establish respect for persons. They stress upon equal participation, cooperation and mutual support and responsibility, all suggestive of the democratic spirit. These concerns make it clear that micro-cultures are fundamentally ethical environments or moral communities in the sense envisaged by Kant. Micro-cultures seek to establish a moral community, a local democracy. They are supportive of participants' autonomy of choices and desires, they expect each to contribute to the setting of norms and rules, and they operate by rules achieved by consensus.

Having considered adult education's approaches to facilitation and the desirable characteristics of educational contexts, we can now examine the workplace as a context for its implementation.

The workplace context

In order to capture some of the tensions likely to arise in the implementation of supervisory facilitation, I employ a dual theoretical approach described by Dahrendorf (1959), and later used by management theorists such as McGregor and Dunphy. Dahrendorf suggests that social formations are literally janus faced: they can be analysed from two points of view, permitting the description of two extremes, and the characterisation of real-world situations by the degree to which the two views are influential in them. Each view is built on a different set of assumptions:

The **integration theory of society**, as displayed by the work of Parsons and other structural-functionalists, is founded on a number of assumptions of the following type:

- (1) Every society is a relatively persistent, stable structure of elements.
- (2) Every society is a well-integrated structure of elements.
- (3) Every element in a society has a function, i.e., renders a contribution to its maintenance as a system.
- (4) Every functioning social structure is based on a consensus of values among its members.

...

What I have called the **coercion theory of society** can also be reduced to a small number of basic tenets, although here again these assumptions oversimplify and overstate the case:

- (1) Every society is at every point subject to processes of change: social change is ubiquitous.
- (2) Every society displays at every point dissensus and conflict; social conflict is ubiquitous.
- (3) Every element in a society renders a contribution to its disintegration and change.
- (4) Every society is based on the coercion of some of its members by others.

(Dahrendorf, 1959: 161-162, my emphasis)

This framework was employed to analyse the empirical data, and to develop an account of the possibilities for supervisory facilitation from the perspective of each of the adult-centred traditions within the contexts provided by each view of social formations.

The workplace exhibits, on one view, characteristics of a hierarchical and potentially coercive and hostile context for the facilitation of learning. Boud and Miller are representative of most writers in suggesting that such issues can be addressed through the establishment of a micro-culture. Given the identification above, of the notion of a micro-culture with the notion of a democratic community, and with Kant's ethical imperatives, this suggestion can now be seen as potentially problematic. The assumptions of the notion of a micro-culture are largely integrative, in Dahrendorf's terms. The assumptions of supervision are ultimately coercive, since the supervisor represents the organisational interest in the relationship.

The empirical study

This paper arose from a study of the role of workplace supervisors in the learning of staff. All the participants were new employees who were finding their way in a new job with a new supervisor. They were interviewed before they started work, and frequently in the first weeks and months of their employment. The interviews looked at what they were learning, at who facilitated their learning, at their relationships with their supervisors, and at the role that their supervisors played in their learning.

The demands of trust building

A trial-based model of trust building was employed to explore the participants' experiences of trust with their supervisors, and to analyse the trust related demands of the conceptions of facilitation in the traditions of adult education.

The model was first proposed by Luhmann who conceptualised trust, using a systems-theoretic framework, as a way of reducing uncertainty and complexity for individuals: and hence as an aid to action. The fact of freedom makes the calculus of action complex, but trust allows us to assume that others will act in accordance with their revealed to us personalities. This, in turn, allows us to act.

Personal trust comes about in a process consisting of small steps (Luhmann, 1979: 41), beginning with an assessment of the potential for trust. To the extent that the other person's behaviour becomes predictable and consistent, the person thereby becomes trustworthy, although he or she may not yet be trusted.

In the beginning of the development of personal trust, no one plays for high stakes. Trust develops in small steps to minimise betrayal. At each stage trusters must expose their dependence, and they must risk betrayal. This is what I have called the burden of trust. The person being trusted must be in a position to betray, and must have some real interest in doing so, otherwise the trust is never truly tested. Trust development can also be seen as a learning process: a process of testing limits, exceeding thresholds and learning about the trustworthiness of the other. If trust seems justified, but the trustee is merely acting in his or her own interests or merely as a functionary, then trust is misplaced. Luhmann uses the notion of a *supererogatory* performance to capture what is involved in earning trust: committing acts which could not be commanded but which because of their nature engender claims such as gratitude or trust (Luhmann, 1979: 43). Trust therefore can only be offered, not demanded.

In the supervisory relationship the burden of trust is asymmetrical. The fundamental burden falls on the supervisor who needs to be able to trust each staff member to perform. Staff have to prove their trustworthiness. Facilitative relationships are also asymmetrical, and the burden of trust falls on the learner, with the facilitator needing to prove trustworthy. The suggestion that supervisors act as facilitators therefore imposes double and counteractive burdens of trust on each party. Each must come to trust, each must prove trustworthy.

The supervisor's role

The study revealed a disjunction between the participants' sense of themselves as whole persons and their developing workplace identities. They were concerned to build and save face for the latter. It also revealed a high level of indirect influence by supervisors on the learning of staff, an influence largely exercised through the delegation of challenging tasks and through the imposition of accountability measures. On the other hand, the supervisors had almost no role in what might more traditionally be thought of as the facilitation of the learning of their staff, which is to say they had no direct influence over the learning processes of staff. They hardly ever gave formative feedback, they were not involved in facilitating reflection on critical experiences, and their contributions to discussion were almost always judged to be 'political' which meant they were seen as saying what should be said, not what they believed. The participants, for their part, were at pains to manage their workplace personas to ensure that supervisors got the best possible impression of them. To this end they would conceal incidents, hide mistakes, and plan strategies for encounters with their supervisors.

The supervisor was the last person they would approach with a genuine dilemma that might reflect badly on their work performance, the last person they would use as an aid to reflection on a critical situation.

Supervisory facilitation reconsidered

The possibility for supervisory facilitation as might be implemented for each of the traditions of adult education can now be reconsidered.

Supervisory facilitation in the tradition of training and efficiency in the classroom.

For models of supervision that are built on coercive assumptions—models that emphasise the discipline and control of labour in pursuit of instrumental ends—the training tradition's focus on outcomes, on predicting and controlling behaviours, and on giving feedback is quite concordant. The implicit assumption of hierarchy, with the trainer cast as the expert, or at least as having access to the expertise embodied in the training plan, sits well with hierarchical and coercive models of supervision.

The demands on the interpersonal relationships between trainers and learners are low, but they are not altogether absent. The burden of trust in facilitation in this tradition is more evenly distributed. Trainers aim to achieve outcome targets, just as supervisors do, and hence there is a burden of trust imposed on them. In attempting to achieve their outcomes, trainers need to come to trust trainees to involve themselves in the learning activities they have arranged to the extent necessary.

Trainees must also trust trainers to the extent needed to contribute actively to the program, and to maintain their original consent to participate. The requirement for personal trust is bi-directional, but still quite low and relatively impersonal. The organisation itself carries the greatest burden of trust. In situations in which there is a balance of integrative and coercive elements, the low level of personal trust should be achievable.

While the trainer in this tradition is to some extent merely a functionary who implements a predetermined training plan, the requirement to develop a level of trust between the parties means that the trainer must depart from the pure functionary role in order to appear trustable and win cooperation. Without these departures trainers would appear to be merely functionaries, and as such, in Dahrendorf's terms, would be untrustable.

If the supervisory relationship, or its context is significantly coercive, it is unlikely that even the low level of trust and cooperation that is called for will be achieved. Highly coercive supervision abandons trust in favour of wholehearted discipline and control. Coercive supervision is not conducive to supervisory facilitation, nor to effective supervision.

The stereotyping of needs and learners in this tradition supports a utilitarian ethic in which the training plan is developed to support the stereotyped majority. Individuals who do not fit the stereotype may be excluded, and their learning needs may be ignored or undermined. The use of behavioural change models means that issues of identity are effectively bypassed. Distinctions between workplace identities and whole persons are largely irrelevant, private lives are ignored, and face is preserved for both parties—provided the learning outcomes are achieved.

Supervisors working from integrative assumptions will find this tradition somewhat undermining. While emphasising participation in decision making, their training role will underline their expertise and authority, while encouraging teamwork and cooperative practices, their training role will highlight individual feedback and achievement, and while giving greater respect for individuals, their training role will involve them in stereotyping.

Integrative approaches may, however, make it easier for the supervisor-trainer to develop trust in his or her staff. Careful implementation of the role, with de-emphasis on those aspects that undermine integration, may offer the supervisor an effective approach to facilitating the learning of staff.

Supervisory facilitation in the tradition of self-directed learning and the andragogy school.

The facilitative processes of this tradition parallel many supervisory processes. Supervisors may be involved in negotiating performance targets, required resources, deadlines and so on with staff, and sometimes these agreements will be formalised in performance contracts. The negotiation over learning goals, resources and facilitation needs could and often is incorporated into this general supervision activity, so that supervisory facilitation in this tradition could be a realistic option. Indeed learning goals often arise directly from the delegation and specification of tasks, as was found in the empirical phase of this study.

This tradition makes few demands on the whole person of the learner, and while it requires more direct interaction between facilitator and learner, still there is little direct involvement in the learning processes undertaken. Since the responsibility for learning is shifted to the learner, the burden of trust in the facilitation relation is more on the learner than on the facilitator. In workplace contexts in which integrative approaches predominate or are well in evidence, staff may develop sufficient trust in a supervisor to support supervisory facilitation in the andragogy tradition.

Staff members would not easily reveal the 'messy details' of their learning during negotiations over learning. However, since the tradition makes few assumptions about whole person involvement and does not envisage direct intervention in learning processes, these reservations should not be problematic, provided that the learning proceeds smoothly and productive activity is maintained.

Where the participants worked in integrative workplaces with supervisors who were consultative and supportive, agreements were reached with supervisors about learning goals, resources and facilitative support. The supervisors' roles conformed broadly to those envisaged in the tradition, although the air was perhaps more impersonal than the tradition envisages.

In coercive contexts, or with supervisors working with coercive models of supervision, the degree of distrust that staff may develop in their supervisors may erode support for andragogical facilitation. In coercive contexts winning the trust of the supervisor may offer the only means of survival, and the requirement to prove trustworthy will work against the development of trust.

Supervisory facilitation in the tradition of learner-centred education and the humanistic educators

This tradition addresses the whole person, and to some extent the context, of the learner, to further his or her growth. Facilitators may intervene directly in the learning process, even using hierarchy and cathartic confrontation, to achieve autonomous and democratic ends. This tradition makes the highest demands on the personal and interpersonal dimensions of the participants in the facilitative relation and, because of its willingness to act without the learner's explicit consent, makes the strongest ethical demands on facilitators.

A fundamental conflict of interest between supervisors and staff is always potential in the workplace. It is an explicit aspect of the coercive workplace. This alone makes it difficult for the supervisor to honestly intend to act in his or her staff members interests alone. A supervisor may grasp the interests of a staff member in relation to particular workplace situations, but this restriction itself belies the whole person approach that characterises the tradition.

The issues of identity restrict the possibility of humanist facilitation in the workplace. The sense of the workplace as a public space with its own ethical and behavioural standards, together with the construction of workplace identities and the effort put into building and saving face for them, all suggest that anything like the whole person of the learner is unlikely to be available within the facilitation relation. And even if it were, the act of addressing the whole person of the learner to further the ends of the organisation is hardly able to claim the ethical purity demanded.

The burden of trust in the facilitative relation falls firmly on the learner here. The learner must be able to trust the facilitator, even when they appear not to be doing so. Unless the supervisor is willing to betray the organisation or jeopardise his or her own position to protect the learning and the interests of the staff member. Such a supervisor would also be expressing high levels of trust in the staff member, demanding proof of trustworthiness in return. People develop this degree of mutual trust, but the fundamental principle involved is love, as Heron makes clear:

The principle of love. I define this, for facilitators, as the commitment to provide conditions within which people can in liberty and co-operation determine and fulfil their own true needs and interests. (Heron, 1993: 59)

This is an unlikely occurrence within a supervisory relationship, and one that could not be recommended as a strategy to supervisors. The act is supererogatory, and the intent is just not what the workplace is about.

In integrative contexts or where supervisors are working from integrative assumptions, this tradition encourages the broadest view of the staff member and of his or her learning goals, and of the supervisor's role in that learning. In highly integrative environments sufficient respect for individuals may be achieved to permit levels of trust that could support some level of humanist facilitation, although the ability to ethically

employ confrontive and cathartic interventions and to address issues considered private by the learner would seem unlikely.

Facilitation could address workplace identities and experiences at their face value. Even then, the cautions about aligning espoused theories with theories in use should be heeded, especially when the learners lack significant control or authority in the organisation. The scope for facilitated reflection on experience is represented by what occurs in many quality circles: limited to quantitative data and to qualitative observations that save the face of the participants. Even so, the empirical data gathered in this study would suggest that employees will manage their workplace identities to protect themselves, their self esteem and their privacy.

In coercive contexts the conflicts of interest, utilitarian ethics and low levels of personal trust that pertain would deny the possibility of supervisory facilitation.

Supervisory facilitation in the tradition of critical pedagogy and social action

Discussion if not dialogue is highlighted in integrative supervision, where teamwork and motivation are emphasised. Integrative supervisors try to be open and frank with staff, to discuss and debate with them, to win their consent through argument. Participative decision making and semi-democratic forms are supported by integrative supervisors.

Facilitation is much less personal here, since the rational self is the sole object (or subject). We participate in dialogue as rational beings. Participation in dialogue does not require high levels of personal trust. One just has to trust the commitment, albeit ethical, of the dialogue partners to the principles of dialogue. These considerations support the idea of supervisory facilitation in this tradition, however not everything does.

Workplaces always impose limits on speech and thought. This is frequently acknowledged:

All learning in the workplace does not call for this depth of analysis, nor is it always encouraged or even tolerated. (Marsick, 1988: 46)

The restriction flows from the instrumentalism of the workplace, from its pursuit of others' ends. So implementing anything like the free dialogue envisaged will prove difficult. Further, a number of real-world constraints restrict the supervisor's ability to commit to dialogue with staff.

Implicit in Marsick's qualification above, is the suggestion that critical dialogue might be appropriate on some occasions, and not on others. The same is often suggested for participative decision making. The suspension of dialogue in favour of hierarchy impedes the development of trust, since the revocation appears as a form of betrayal.

In the study the participants and their supervisors adopted positions that were more political and more a part of their workplace identities, than they were their own. They regarded these discrepancies as rational survival techniques and accepted them easily, almost admiring them in others. Cautions about aligning espoused theories with theories in use, especially when the learners lack significant control or authority, should also be heeded. If speech is not free, discussion may just align public behaviour with public espousals. Staff may be forced to live the lie.

The level of personal trust required for dialogue is relatively low so discussion should be possible in integrative environments and with supervisors working from integrative assumptions. But the resort to hierarchical authority to resolve disputes will inhibit the willingness of staff to contribute.

Implications for the workplace

Because the study was qualitative, clear conclusions that apply beyond its own focus cannot be drawn. However sufficient external validity may have been established to permit the following sketches to find some resonance with readers own experiences.

Interest in the concept of a learning organisation is ongoing (Hough & Paine, 1997; Senge, 1990; Watkins & Marsick, 1992; Watkins & Marsick, 1993), even if the precise nature of the concept is subject to continuing debate (Marsick & Watkins, 1999). Limerick (1993) seeks an organisational model based on action learning, and suggests that control structures need to be loosened (Limerick & Cunningham, 1993: 231). Marsick and Watkins (1999) seek similar changes.

This study suggested that even a significant loosening of the controls over individuals is unlikely to significantly diminish the attention they pay to issues of face and trust in the workplace. The participants in this study revealed highly developed sensitivities in these areas, even those working in supportive workplaces. Their supervisors were supportive and understanding, and were liked by their staff. Yet the participants kept their reserve and remained wary when it came to issues that could be explored only within relationships characterised by developed trust.

The likelihood that these reservations could be overcome merely by changes in the emphasis of supervisory interactions would seem to be low. Organisations must retain a concern for control in order to maintain coherence, and to the extent that they do, individuals will manage their workplace identities to enhance and save face, and to hide learning processes.

Increased democracy in the workplace might help transcend these constraints. Participative and democratic forms of workplace organisation would be concordant with the adult-centred traditions of facilitation, and may enable individuals to overcome some of their related sensitivities. Indeed Marsick and Watkins (1999:213) note Korten's (1995) call for employees to be citizens first, while accepting that:

...more organisations have invested in learning organisation experiments focused on the learning and changing of employees than have invested in changing the underlying structures of power and knowledge creation in the organisation. (Marsick & Watkins, 1999: 213)

Related to the above considerations are trends towards greater individual accountability within the modern workplace. These trends involve increase individual responsibility and levels of delegation. These trends may be analysed as increasing the burden of trust for supervisors. Reciprocally, staff must intensify their efforts to prove trustworthy. These trends work against the possibility of significant involvement of supervisors in the learning processes of staff.

But learning will not necessarily suffer in accountability-focused situations. The participants were very effective learners, and this indicates that the focus on outcomes and on accountability that was apparent in the study, precipitated effective learning processes. Supervisors should focus on the significant indirect effects of their actions on the learning of staff. However, they are unlikely to be able to sustain a direct, personal or facilitative role in relation to the learning processes of staff.

Beyond the workplace

Similar considerations may apply to the relationship between teachers and students. The influences of assessment on student learning approaches are well documented (Ramsden, 1992: 38f). But the readiness of students to trust their teachers and to submit to facilitation is rarely considered. Rather this readiness is often assumed by being subsumed in the concept of voluntary participation. But teachers who assess their students' have influences on their face and interests in much the same way that supervisory power and influence affects workplace identities.

Given these similarities, tensions similar to those explored earlier may pertain in teacher-student relationships where the teacher assumes the role of assessor (or of selector or reference writer etc.). Where the assessment of performance is independent, or where the objectivity is enhanced through criterion referencing, these tensions may be reduced or eliminated. The metaphor of the coach may then become more apt, because coaches are usually independent from the assessment of the outcome performance of those coached. The frequent reference to coaching in the literature (see for example Field & Ford, 1995:89) suggests that the impact of hierarchy and control issues on staff has been seriously underestimated.

Finally, the participants were consistent in seeking help and support from colleagues and from independent others, including the researcher. This suggests that a renewed focus on peer coaching and learning might be an effective approach for organisations wishing to enhance learning. A renewed emphasis on peer teaching and cooperative learning in educational settings could also be useful. Organisations could also consider using independent facilitative services, as called for by Kornbluh (1989: 260).

This study suggests that the proposal that supervisors become facilitators of the learning of staff will be difficult to implement. Workplaces do not readily support the assumptions of the traditions, especially with regard to democratic forms, trust and ethical norms. These issues also affected the participants, who acted to protect their learning processes from coercion by untrusted facilitators. The concerns and needs of learners should always carry greater weight for adult educators than those of managers, supervisors, teachers or facilitators.

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WRITING-UP PEOPLE AT WORK: INVESTIGATIONS OF WORKPLACE LITERACY

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Popular discourse on literacy and work constructs a picture of rapidly rising literacy requirements at work creating a skills shortfall for more and more workers. According to Hull and Grubb, we are constantly being told that

... times and the industry have changed, and now [even assembly workers] are expected to operate expensive and complex machinery, to conduct their work in conformity with international standards, and even to participate in 'self-directed work teams' on which they set and monitor their own goals for increasing productivity and maintaining high quality. (1999:311)

Individuals are said to lack the functional skills needed to respond to these changes, and this puts the enterprise, the community and the nation at risk (Castleton, 2000; Hull, 1997). Remedying this situation is the aim of the majority of funded literacy programming across the industrialised world (Holland, 1998; Hull, 1997; Darrah, 1997; Street, 1995).

This paper joins a small chorus of voices seeking to 'amend, qualify and fundamentally challenge' this popular discourse (Hull 1993:44). It does so by proposing an alternate framework for investigating the "meanings-in-use" of routine literacy practices (Castleton, 2000, 1999; Street, 1995) in the 'new' high performance workplace. It also follows the lead of Darrah (1997) in directing attention to the study of 'work' rather than workers.

I will try to show that literacy practices do indeed have a key role in the 'new workplace' that is quite different from the past, and that this has enormous implications for literacy and literacy learners. But the problem I am concerned with is not whether and how literacy requirements are 'higher,' and workers are being 'left behind,' as we hear in the media. In fact, this claim about 'higher' skill requirements remains open to considerable debate, though this question remains mostly beyond the scope of this paper. What I do aim to show here is about change in the 'relations of literacy' in the so-called 'high performance' workplace. As 'data-driven' decision-making has come to be touted as the 'best hope' of a competitive edge, literacy practices have been moved to centre stage in management of the workplace. In this new context, even 'simple' literacy tasks, such as recording dates or batch codes on a clipboard and signing a name, can have extended implications for workers, as their own written words become 'data' in a managerial process. For workers with limited power and status in that process, regardless of their literacy competence, these arrangements can make literacy requirements in work a matter of high risk and high stress. The source of this 'literacy problem' at work lies not in the functional skill deficits of individuals, but in the workplace social relationships in which the 'local meanings' of literacy tasks are being transformed.

There are of course several lively strands of literacy research that are highly critical of these arrangements (see Castleton, 2000; Hull, 1997, 1995; Gee et al, 1996). They show us hegemonic discourses, virtuous realities, controlling literacies, and the 'paradoxical logic of enchanted work leading to ... disenchanted workers' (Gee et al 1996:45). Growing emphasis in this work is on the management of subjectivities, to construct 'new kinds of people' with values, beliefs and identities to fit the 'new capitalism.' I draw on all this work, and agree that it has made a monumental contribution to contemporary understanding of workplaces.

Nevertheless the first paper of this paper is inspired by the conviction that analysis of literacy in today's workplace has much to gain by not jumping too quickly to the arena of 'values and identity' as the principle focus of investigation. Instead, I will argue that we need to linger longer on an analysis of the actual working practices of front line workers. In doing so, we have much to learn about the 'local meanings' of literacy tasks which depend upon how they are embedded in contemporary forms of work organisation. These 'local meanings' are central to the success or failure of any attempts to promote literacy practice through workplace education. And such background knowledge is an essential form of 'workplace literacy' for educators themselves that we cannot afford to overlook. (Brown, 1994)

In the final section of the paper I will return to the problem which I have attempted to signal in my title. That is, the intensification of literacy practices described in this paper is part of what Darville (1998) calls the 'textualisation' of work. This is part of a wider phenomenon of textual mediation as a pervasive mode of governance in contemporary society (Smith 1999, 1990. Campbell and Manicom, 1995). In this textual

mode of governance, workers are being organized and mobilised as self-disciplining practitioners of the very mechanisms of 'control' used against them. Their own literacy practices on the job serve to enter them into a managerial process in which they are 'subject to' but not 'subjects of' the workplace texts they help to create. Thus even workers with limited 'literacy skills' are engaged in 'writing-up' themselves and others at work, in ways that are inseparable from the exercise of power. Thus we confront how workplace literacy is "part of the power of those who have power" (Darville 1995:250).

The new workplace

The last 20 years has seen the emergence of a burgeoning popular, professional and academic literature on work. The majority of this writing has been concerned with the impact and implications of technological change and new approaches to management. Intense theoretical debates fueled workplace research examining the changing nature of work and organisations, the ambiguity and elasticity of notions of 'skill,' and changes in the workplace around power and control. In recent years, scope of these debates has expanded to include issues of subjectivity and identity at work (see *inter alia* Zimbalist, 1979; Borawoy 1979, 1985; Zuboff, 1988; Garson, 1988; Thompson and McHugh 1995; Casey, 1995; du Gay, 1996).

A key strand of these debates has focused on the decline of mass production and the emergence of new regimes of work known variously as post-fordism, flexible production, lean production, Japanese management, or just 'the new workplace' (James, Veit and Wright, 1997; Ackers, Smith and Smith, 1996; Pollert, 1991; Piore and Sabel, 1984).

All of these concepts refer to approaches to management that include a mixture of emphasis on technical or 'hard' elements of production management (emphasis on conformity to standards and use of statistical process controls) and social or 'soft' elements of human resource development (emphasis on employee participation and customer orientation) (Delbridge, 2000:4).

In popular literature, the concepts of team working and worker empowerment have come to be seen as almost synonymous with the 'new workplace.' Contrast is drawn or implied between an 'old' philosophy of oppressive worker control versus a preferred new philosophy of worker empowerment in 'high trust' environments (Gee *et al* 1996; Legge, 1995). Robust debate continues about the pro's and con's of all this, and particularly about how widely these ideas are actually put into practice. Furthermore despite the enormous literature promoting these ideas in theory, there has been much less empirical research to explore what they look like in practice. Nevertheless, there is said to be a growing consensus in industrialised countries that 'best practice' should involve moving toward "... the integration of low buffered and tightly controlled technical systems with flexible, high commitment, team-based social systems that incorporate increased worker skill and involvement." (Delbridge, 2000:6)

While the 'soft' side of the new management philosophy - the vocabulary of human resources management - has effectively caught the public imagination in recent years, the technical or 'hard' side of these management equations is less fashionable to discuss. In this paper I will attempt to show why the two cannot be prized apart if we are to be well informed about the impact and implications of the new workplace for literacy and literacy learners. Thus I will begin by trying to describe, briefly and selectively with an eye for relevance to literacy, some of the key features of 'production management' which are central to the realisation of 'flexible' or 'high' performing workplaces.

High Performance:

'High performance' refers to a workplace that is committed to continuous improvement, always aiming to achieve 'more with less.' It operates in a highly competitive market, changes quickly in response to its 'customers,' and 'competes on quality' as well as cost. Every employee is said to be part of the 'quality chain' and thus important in achieving workplace goals. Management methods are said to focus on building 'shared vision' and 'high commitment'. Achieving this involves some degree of devolution of decision-making to team members, and this is the basis of the claim to greater satisfaction in work (see Womack, *et al* 1990; see Stein and Sperazi, 1994).

At the center this picture of the 'high performance' workplace are two familiar and tightly interwoven workplace initiatives: continuous improvement and quality management or quality assurance. Here I will briefly outline key elements of each.

Continuous Improvement:

Continuous improvement is practiced under a variety of names, 'Kaizen' being the term made famous by Japanese auto manufacturers. There are many variations on a theme, but the basic principle is the systematic use of a cycle of planning, executing, checking, and refining operations to improve efficiencies in all aspects of the production process. Its proponents call it a combination of "common sense, self discipline, order and economy" and a basic "building block" of corporate success (Imai, 1997: xvi)

Two elements of continuous improvement particularly illustrate the role of literacy: elimination of waste and standardization. Elimination of waste means incrementally reducing the use of materials, equipment, time, space or effort that doesn't contribute directly to profits. This includes reducing so called 'buffers' of stock-on-hand and streamlining relationships according to the principle of just-in-time. All this depends on intensive record keeping. Similarly, standardisation means deciding the best way to do things and then ensuring these methods are followed consistently. It is said to be the 'golden rule' of quality, and it is entirely document driven.

Importantly for our purposes, both of these elements of continuous improvement rely on the concept of 'speaking with data.' This means that information is systematically collected, processed, and put to practical use to monitor, assess, and set goals. Masaaki Imai, one of the key proponents of 'Kaizen' ('continuous improvement') writes

In order for a problem to be correctly understood and solved, the problem must be recognised and the relevant data gathered and analyzed. Trying to solve a problem without hard data is akin to resorting to hunches and feelings - not a very scientific or objective approach. Collecting data on the current status helps you understand where you are now focusing; this serves as a starting point for improvement. (1997:6)

Data comes from many sources, including the most routine and pervasive use of even rudimentary forms of record keeping and checklists as part of the daily work tasks of employees. Where computers are in use they greatly expand this capacity for data capture and information generation (see Zuboff, 1988) But even in workplaces with very low levels of information technology, continuous improvement methods call for the routine use of several different types of diagrams, graphs and charts (e.g. pareto diagrams, cause and effect diagrams, histograms, control charts, bar charts, and scatter diagrams) to identify problems, establish their characteristics and their cause, to evaluate their implications and level of priority. (see Imai, 1986:239-242). In some workplaces this is done by team members themselves, in others by supervisors, and in still others by management. But the principle of generating and using data in these or similar ways is a distinguishing characteristic of the 'new workplace' and it depends centrally on literacy practices.

Quality management and assurance:

There have been many names for quality improvement initiatives over the past twenty years (e.g. TQM - Total Quality Management, QA - Quality Assurance) but most of them share a few basic features. They require an organisation to specify, implement, monitor, and document their compliance with standard operating procedures in all areas of the work process. Thus they can be used by customers to evaluate the adequacy of a suppliers business practices.

Quality systems require the supplier to standardize work practices to maintain consistency of results, collect data to monitor their own performance, and to implement measures to ensure that all production processes are 'under control.' Among other requirements, quality systems impose methods for 'product identification and traceability' which provides "the ability to trace the history, application or location of an item or activity by means of recorded identification ... during all stages of production, delivery, and installation." This can be done through "marking, tagging, or documentation of service ...[and] may require identification of specific personnel involved in phases of the operation. This can be accomplished through signatures on serially numbered documents...." (Peach, 1992: 62)

Furthermore, since documents are the mechanism of quality control throughout the work place, quality systems also require tight control of documents themselves. Companies are required to 'establish and maintain documented procedures to control all documents and data that relate to the requirements of the International Standard.' Furthermore, "Invalid and/or obsolete documents must be removed' to prevent unintended use. Thus documents themselves become the subject of a documentary control system in the workplace, and 'non-conforming' use of paperwork of any kind becomes a violation of quality regulations. All this has considerable implications for literacy practice.

High trust or no-blame culture of work

Last, but not least, the high performance workplace is often identified as one where workers are involved in the process of decision-making about their work processes. Success in this form of work organization is said to involve flattened hierarchies and high levels of participation, leading to high levels of satisfaction, high levels of trust and thus high levels of commitment. Thus it is said that the key to all of this is the creation of a high-trust, no-blame culture of work.

For example, see the following excerpts from the High Performance Manufacturing Consortium in Ontario:

The keys to raising people to this level of competence lie in management's ability to establish a no-blame environment that not only provides individuals with the tools they need, but also with an environment that is built on clear goals, trust, integrity, openness, consistency, and a true respect for human dignity.....Some of the behaviours that emerge from a no-blame environment include the open disclosure of personal shortcomings without embarrassment, and an increased willingness to speak out and present ideas....The underlying motivational factor that 'turns people on' stems from their ability to make improvements that impact their jobs. What results is measurable achievement which, ... is the greatest motivational factor of all. ((HPM Consortium, 1999 and Website)

According to HPM Consortium, this approach to workplace relationships is

...analogous to coaching a congregation to open their hymn books to the same page in unison... with the development of a no-blame environment assuring that people work together to reach the same verse, line and harmony. (ibid.)

On the surface, these issues of trust and blame appear to be about 'soft' side of management through culture. And it is very tempting to see them as relating to literacy primarily as a matter of 'developing a literate identity as a worker' in order to be 'adept and comfortable' in such an environment. (Grubb and Hull, 1999:312-13) But closer observation of the tensions and contradictions in the 'new workplace' will show how deeply these issues of trust and blame also intersect with the 'harder' edges management methods of process control, and thus to concrete literacy practices.

High trust or high tension?

Alongside all these optimistic promises about high performance and high trust, there remain a good many questions about the theory and practice of the 'new workplace' and its implications for front line workers. Even proponents report that there are 'gaps' between theory and practice, though mostly they report these as problems of incomplete implementation, or a carry over of habits of mind from the past. For example, in Australia, Laurie Field (1997) argues that managers may fear loss of power or control with the 'new workplace.' As a result, they may act in ways that protect themselves but disempower employees. Employees, for their part, also may be wary of new work practices, according to Field, "partly because of the potential for hostility and blame." So on both sides, the risks are high, personal security issues seem uppermost, and the perceived benefits may be low. Field sees these dynamics as a problem of carrying 'lessons from the past' that perpetuate control-oriented ways of operating.... and a climate of hostility and blame. (1997:154)

Researchers on other continents report similar concerns. In the UK, Keep and Rainbird (1999) argue that after more than a decade of management theory recommending otherwise, the present managerial environment as still characterised by (*inter alia*): low-trust relationships, hierarchical management structures, people-management system that emphasize command, control and surveillance, ...and a culture of blame where mistakes (particularly of lower-status workers) are punished" (1999:174) Meanwhile, recent theories of workplace learning have a tendency to '....ignore [these] fundamental conflict embodied in the employment relationship ...' resulting in overly optimistic predictions of workplace change (1999:184).

Other research in Britain points to related contradictions. At Nissan, for example, in a workplace claiming to be a model of lean production, researchers found that workers had little real power, teams had little authority, time standards for work were often determined externally to the work groups, and quality of working life had not improved. Instead, plants were characterised by high levels of process discipline and control, and the definition of skill "had been turned on its head.... Skill was defined as being able to do the

job correctly and that this was most likely if workers carefully followed the standard operations guidelines determined by management." (Garrahan and Steward, 1992, cited in Lewchuk and Robertson 1997: 43-4.)

Similarly in Canada, in a union survey of 5,600 auto workers in the mid-1990s. Lewchuk and Robertson (1997) found that most of their results contradicted the promises of 'empowerment' made by proponents of lean production. "A majority [of workers surveyed] found it difficult to modify their jobs, vary their workplace, or leave their workstations to attend to personal matters" like going to the toilet. They also found that the 'leaner' plants were more likely to report an increase in management monitoring of work. They concluded that while company documents paid lip service to empowerment through lean production, 'the real focus is process control ... [and the] range of autonomous action may actually be reduced' (1997: 60)

A detailed ethnographic study by Delbridge (2000) of two auto plants in the U.S. helps to flesh out a more detailed picture of how these contradictions might arise. His data illustrate how 'continuous improvement' and 'quality assurance' practices translate into *process discipline and control*. He argues in this context that high performance is not achieved because of high trust, but because workers have little choice if they want to keep their jobs.

For example, Delbridge illustrates how the principle of 'speaking with data' is combined with 'visible management' techniques (see Imai 1997) to allow for very specific quality information to be recorded and made public, including the identification of individual responsibility for errors. Quoting from his field reports, Delbridge writes

"The numbers of mistake per day are totalled, and displayed on a monthly basis. The display includes a colour-coded chart above each individual operator's head. There are red, yellow and green charts, with the words 'danger' 'warning' and 'good' respectively marked on them. The allowed number is 20 errors for a month.... [and] if this is exceeded then the operator is 'taken into the coffee lounge' and 'counseled' that an improvement will be expected or they may receive a written warning." (2000:52)

This example illustrates how the 'new' workplace methods of generating and displaying production data can be used to enforce production standards as well as to discipline poor performers.

Delbridge uses the term 'marginalising uncertainty' to explain how this web of pressures to conform can be utilised as a basic production management strategy:

...evidence suggests that management can effectively reduce the impact of uncertainty in certain circumstances... in part through greater *process discipline and control*. For example, the moving assembly line determines a relatively uniform work speed, the reduction of internal buffers of stock and time imposes a rigidity and discipline to production schedules, and the close monitoring of quality with individualized accountability at each stage of the production process maintains pressure to conform to management expectations and ensure that defective production is identified almost immediately. (2000:181)

Delbridge argues that in these circumstances "...little authority needs to be exercised by way of personal control," yet the company "...operates with increased spans of control underpinned with a highly effective monitoring and surveillance system, particularly for quality performance." The "smooth, reliable, and (managerially) preordained set of shop-floor activities" together with "formal monitoring and control systems [that] record information on how the system matches with what is anticipated..." all leads to a work environment that is managed through self discipline, peer pressure a culture of blame. (2000: 181, 191)

So, where is all this taking us? Clearly these conclusions drawn by Delbridge and other researchers stand in sharp contrast to the optimistic theories of the 'new workplace' as a place of empowerment and high trust. For clarity, let me try an informal summary here of how their 'counter-story' might sound in plain language.

In the 'new workplace' workers are drawn into the processes of controlling work through the increasing demands that they document and record their own work. They fulfill these expectations under circumstances not of their own choosing, in which they have little control over what will be done with the information they create. Some of it may be used to set standards, monitor, assess and discipline their own work. Thus through literacy practices as such, they participate in policing their own work, by providing the evidence which may be used against them by their superiors. Workers role in this policing work is mediated by document-based systems of quality management and assurance procedures, continuous improvement processes (and including customer service scripts in the service sectors).

So, the first point to notice about all this is the role of literacy in these stories and counter stories. Both sides of the debate place literacy practices at the centre of their case. One side claims the intensified use of literacy practices as evidence of empowerment, the other as evidence of disempowerment. This is certainly a case of contested local meanings of literacy-in-use. But note that in neither case does the argument have much to do with 'skills' per se. Indeed, from a strictly 'skills' perspective, it might be hard to see what the debate is about, since people who are perfectly competent to perform the required tasks may subscribe to either set of meanings, or have another interpretation entirely. These differing interpretations of meaning would likely govern the willingness of the individual to engage in literacy practices. But this level of analysis would fall outside the mandate of the skills based educator, and might show up in his/her descriptions as the time honoured problem of worker 'embarrassment,' 'hesitation' or 'lack of confidence' in the face of literacy expectations (Darville, 1995). This 'blind-spot,' or choice to disregard, the problem of local meanings could be considered a measure of the 'workplace literacy' of educators.

Second and relatedly, whether you subscribe to the view that the literacy relations we are discussing are empowering or disempowering, the literacy dynamics we are investigating are part of what Darville calls the 'textualisation' of work (Darville 1998). This raises questions not only about whether individuals can perform the tasks, but about how such participation locates or positions them in the action. These issues too are about the meanings of literacy-in-use.

I will turn to this point in the final section of the paper.

Textualisation: Writing up and writing down

Literacy practices are increasingly central to management through what Darville (1998) calls the 'textualisation' of work. He points to this as a generalised form of governance in contemporary, industrialised societies, where knowing and acting are mediated by texts (e.g. laws, constitutions, driver's licenses and health insurance cards) (Smith 1999, 1990). In practice, this means that literate practices are the dominant means of exercising power in our societies (Darville, 1995:255) and indeed the history of literacy itself is the history of 'rendering populations administerable by the church, government, corporations' (Darville, 1999: 254; Graff, 1981). In all this, the dominant form of literacy, according to Darville, is organizational literacy, in which "...what counts is how matters can be *written up* (to enter them into an organizational process) not how they can be *written down* (to relate experience or aid memory) (1995: 254).

I have found this distinction between 'writing up' and 'writing down' extremely helpful in thinking about ordinary events in the workplace. The literature on workplace literacy, and the research of which this paper is a part, are full of stories of literacy learners who keep little notebooks in their pockets. These they use privately, often secretly, to 'help me remember' words and numbers they need to help them in their day. Importantly, this is a voluntary form of literacy over which individuals retain control. It is a clear example of what Darville calls 'writing down' and is the source of much pride for many literacy learners. By contrast, this form of document use is officially forbidden in a workplace where all authorised information has already been 'written-up' in quality assurance system. Private notebooks are 'non-conforming documents' and are thus a violation of 'process control'.

Workers with limited literacy backgrounds understand this difference very well. Many take pride, even feel empowered by the experience of 'writing down' words and meanings that they control. But confronted with the request to sign her name on a research consent form, one woman in our research site expressed the immediate fear that 'I go to jail' if she simply signed her name. This is what Darville describes as encountering literacy as 'conveying someone else's power: (1995:255).

Indeed, in today's changing workplace, the changing textually-mediated social organisation of workplaces means that literate practices increasingly draw workers into and make them daily practitioners of workplace relations which reflect someone else's power. Indeed the literate practices which are required of them specifically strip them of their own power by positioning them as accountable to levels of decision-making from which they are excluded. In this context, workplace literacy practices are indeed a disciplinary regime, not only in the bureaucratic sense of 'process control' though this is also true. But increasingly also in the Foucauldian sense of rendering individuals 'subject to the text.'

Many elements of this conundrum are captured by Hull (1995:19) when she writes:

To be literate in a workplace means being a master of a complex set of rules and strategies which govern who uses texts and how and for what purposes. [To be literate is to know] .. when to speak, when to be quiet, when to write, when to reveal what was written, and when and whether and how to respond to texts already written. Thus, we might better serve our adult

students were we, as Luke (1994:11) suggests, to adopt "a model of reading that enables one not only to decode and construct messages, but which makes explicit and overt the social relations of power around the text, and places squarely on the table the issue of who is trying to do what, to whom, with and through the text.

Meanwhile, the textualisation of work does not happen automatically. It is the subject of ongoing negotiation in many workplaces. Managers and supervisors experience this as the daily struggle to get workers to 'do the paper work' associated with the changing business environment. This might take the form of a new customer demand for quality assurance or safety certifications. Managers are increasingly aware that without the certification, there's no customer. So the job of 'writing-up' the workprocess in a form that makes it accountable, certifiable and marketable is increasingly inseparable from the job of producing the product itself. As supervisors everywhere tell their reluctant workers, writing-up nothing makes it look like you've done nothing. On the contrary, as Darville argues, 'writing up' is increasingly the form of the work that counts..

But amidst the routine pressures of the work day, workers continue to avoid the paperwork. The work 'that counts' for them is 'getting the product out the door' which they see as the best way to keep the customer happy. Thus even simple requirements like keeping a written record of machine readings or product codes often turn out to be an occasion for 'resistance' or non-compliance. The most common response (among employers and trainers alike) is to look for a training solution: "How to fill out the supplies checklist." When conformance doesn't improve with training, supervisors resort to complaints about laziness, or bad attitudes. Hardly anybody wants to think past this impasse, to explore how simple workplace literacy tasks like 'checklists' might be a problem of power relations. It appears to take what should be simple problem of 'skills' and 'compliance' and makes it 'complicated.'

But in practice, nothing at work is simple. The new textualised work order makes a myriad of demands for 'simple' textual practices (gathering data). But each small act of reading and writing, however limited, is an essential 'building block' of high performance, data-driven management. Thus, 'what counts' is compliance with procedures that 'integrate' individuals into the control of work' (Darville 1998). But importantly, this is not the same as having or even sharing control over work by virtue of reading and writing documents. On the contrary, from a production management perspective, 'control of work' means process discipline, and the specification for that are already 'written up' in 'the manual'

Seductions of theory

I hope this paper already illustrates that 'writing-up people' at work is rich terrain that invites reflection from more theoretical perspectives than I can hope to explore here. But let me indulge one or two tentative observations.

The business literature says that the point of teams generating their own data and evaluating it in team meetings is to 'empower' individuals and groups to take ownership through doing their own problem solving. The critical work studies literature says that all this is more rhetorical than real. But the cultural studies discourse, on the other hand, which I have mostly not discussed here, puts the pieces together differently.

Cultural theorists of work like Paul du Gay (1996) and Richard Edwards (1998) argue that while the practice of the 'new workplace' is complex and contradictory, what matters is that we are witnessing the birth of the powerful discursive phenomenon of the 'reflexive' workplace.' The reflexive enterprise and individual are ones who enter into the dominant discourse by re-inventing or 'writing-up' themselves as the competitive firm, enterprising manager, the self-inventing employee, and the self-monitoring worker - all seeking 'self-actualisation' through aligning their goals with those of the team, the company, the market. All this is cast as a new terrain of 'possibility.' On the contradictions of workplace learning in this context see Usher and Solomon (1999).

But the analysis I have been exploring here, of the disciplining of work and the worker through textualisation of the work itself, shows us how 'writing oneself up at work' might be, in the same moment, a 'new' practice of self-actualisation and/or a 'new' practice of self-alienation. The difference might depend on the how 'writing' our selves 'up' makes us 'subject to' or 'subjects of' the text. This opens several theoretical windows for future investigation

Challenges of practice

I will conclude with two brief observations about the implications of all this for the practice of workplace education.

One interesting and no doubt provocative strategy might be to argue that progressive literacy education should not be restricted exclusively to 'literacy learners.' Instead, workplace educators might initiate 'workplace literacy' programs aimed at supervisors and even managers, to engage them in investigating and addressing 'literacy barriers' in their workplace. For example, how do practices of 'blame' or 'shame' affect performance of literacy tasks in the workplace? How might the work environment be made more safe, supportive, and productive for literacy learners? Can any workers' goals for empowerment be reconciled with management goals of process control? In what sense are these literacy problems? Such an approach to literacy education might be seen as distributing the 'blame' for literacy problems between the workplace and the workers.

My second observation about practice is on strategies for working with 'literacy learners' at work. Progressive literacy teachers have argued for years that a progressive practice of workplace literacy would need to "start within the purposes and aims of individuals" (Darville 1995:259). But there are many versions of what should look like in a workplace context. It is commonplace to argue for literacy learning at work that reflects the broad humanistic aims of literacy work in other contexts in communities, churches, or the family. But others like Darville recommend a literacy learning approach based more in the social relations of the workplace itself. In this context, the aims and purposes of workers might include mastering certain literate practices that make them 'administerable' at work, like correctly filling in pay slips. But other aims and purposes might include how to "resist[] being administered" when they confront literate practices "...as standing over and against them ..." (Darville 1995:259).

References

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WHITENESS AS A SOCIAL CONSTRUCT THAT DRIVES CONTINUING EDUCATION: CLASSROOMS AND PROGRAMS

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Theoretical perspective: are continuing education classes the real world?

Nearly all discussions of teaching simply avoid the question of whether continuing education classrooms are the real world (Knowles, 1992). In such a script, which presents the domain of ivory towers where all students are equal and all teachers are unbiased, we are presented with the unspoken assumption that the activity of teaching and learning must happen in a parallel universe to the real world because the power relationships that are omnipresent in the social and organizational settings of everyday life have been obliterated. By stripping learners and teachers of their place in the hierarchies of social life, this view assumes we stage continuing education where the politics of everyday life do not operate or matter. This view asks us to see teachers and learners as generic entities, unencumbered by the hierarchies that structure our social relationships.

Our view is that continuing education must be the real world because the power relationships that structure our social lives cannot possibly be checked at the classroom door. There is no magical transformation that occurs as teachers and learners step across the threshold of the classroom. This view demands that we see teachers and learners not as generic individuals but rather as people who have differential capacities to act (our definition of power) based on their place in the hierarchies of our social world. McIntosh, (1995) an educational theorist, uses a baggage metaphor to discuss how invisible, majority group privileges structure everyday lives. Specifically, McIntosh (a White woman) examines how White privilege and male privilege affect our lives in and out of educational settings; these privileges are an invisible weightless knapsack of special provisions, assurances, tools, codebooks, and blank checks that can be used in any situation in people's everyday lives. Some of McIntosh's examples that are relevant to educational settings include: 1) I can be fairly sure of having my voice heard in a group in which I am the only member of my race, 2) I am never asked to speak for all the people of my racial group, and 3) If I have low credibility as a leader, I can be sure that my race is not the problem.

The specific theoretical framework that drives this study derives from critical race theory (Omi & Winant, 1994; Tate, 1997) and, in particular, the recent scholarship on whiteness (Giroux, 1997; McIntosh, 1995). As with all other racial categories, whiteness is not a "natural state" deducible from physical characteristics, but rather is a historical, cultural, and political construction that is a social site of power and privilege. Although whiteness is a social construct that is always context-dependent and relational, it nevertheless shapes the lives of people differentially within existing inequalities of power and wealth. Our point is that to understand whiteness is to assign everyone, not only black, brown, yellow, and red people, differentiated places in the racialized hierarchies of classrooms. These effects have been shown in education by Maher and Tetreault's (1997) reanalysis of their data from *The Feminist Classroom* (1994) in which they examined how assumptions of whiteness shaped "the construction of knowledge as it is produced and resisted in the classroom" (p. 321).

Research design and data collection

The design of the study was a qualitative comparative case study (Bogdan & Biklen, 1992) of two courses taught by the authors of this paper. Each class was taught in the same setting, was of the same length (10 weeks), and met one night a week. One class in which 12 students were enrolled, "Critical Perspectives on Adult Education," was taught by a White male professor and had White, Black, and Asian students. The other in which 19 students were enrolled, "Qualitative Research in Education," was taught by a Black woman assistant professor and had Black, White, and Hispanic students. The five sources included: 1) students' (anonymous) evaluations, 2) each teacher's observations, 3) interviews with the students using an interview guide (Bogdan & Biklen, 1992), 4) interviews with the teachers (each teacher interviewed the other), and 5) conversations with similarly situated faculty members. The students who were interviewed were assigned pseudonyms and care was taken so that their identities were not revealed to the professor of record for the course. Seven students from each class were interviewed after the course's completion using a set of questions that indirectly addressed power issues. After each professor read the masked transcripts about their own classes, they interviewed each other a second time. Risk was inherent in this study not only for the students who volunteered but to the teachers who would hear what their students thought about their classes. Because risk was a dominant factor in this study, it was addressed at several points including at the solicitation for student interviews and in the human subjects form.

Results

The concept of positionality addresses how the culture, gender, race, age, and sexual orientation of the teachers and students act and interact in the classroom environment. These positionalities more than any other factor dictate learning and patterns of classroom behavior (Maher & Tetreault, 1994). Two salient examples of student and teacher positionality are reported here. In the seminar class, the professor had the students perform an exercise where they created a class hierarchy ranking their classmates according to their perception of how they were classified in society. One Black woman student recounted this incident as a very painful one for a White woman student who dropped considerably in hierarchical status when she revealed that she was a lesbian:

After she came out in class she was always ranked with me. She lost her privilege and it bothered her. She told me that she would never have come out if she had known that it was going to put her down there with me.

An incident that occurred in the research class involving a confrontation between the Black woman professor and a White male student over an exam gives a clear example of how the professor's positionality can impact the student/teacher interactions. One student analyzed the situation succinctly,

...if I had a problem I would definitely talk to the professor but definitely not in a confrontational manner...There are groups of people who are marginalized in our society. And we know that females are marginalized and of course Black people are. I don't know if that was the person's reason for doing that but I wonder if this person would have challenged a White male the way he challenged her.

This student's analysis was corroborated by the student who confronted the Black woman assistant professor. He explained that he felt "kind of funny in class" because he was surrounded by women who believe that feminism is something they "have to go for." He further explained that the female professor was "dominant" in the classroom and that he saw women as "ornamental." Another analysis of this situation was revealed by a third student who felt that it was wrong of the student to challenge the professor in an openly hostile manner but who also felt that the professor should not have been firm with him in front of the class. Her sentiments reveal that she also felt uncomfortable with the woman professor's reactions which were assertive rather than nurturing. The student's questioning of the "appropriateness" of the exchange placed the blame on the professor even though the male student was insistently confrontational and despite the fact that the teacher requested that they talk after class.

Analysis of the data revealed that the positionality of the professors more than any other factor affected the classroom dynamics. And among the factors that compose positionality, race was the most salient issue. Further study showed that it was "whiteness" that emerged as the primary feature relative to race. This was particularly apparent in the reflective analysis of the professors. The White male observed:

I think it's a really interesting fact that I constantly mentioned race and gender in my course. The course really centered on those two issues perhaps more than any other and yet no one saw me as having an agenda. Whereas, you barely touched on race and gender in your research course and yet your students saw this as your agenda or platform in the course.

In contrast, students could not see past the race and gender of the Black woman instructor. Students frequently mentioned her race and gender as a factor that affected classroom discussions and dynamics. The race and gender of the White male instructor was never offered as a factor that impacted the classroom. Whereas it might appear that her Black race and female gender were barriers to the classroom dynamics, a review of the student and faculty interviews in addition to conducting peer debriefing with other faculty revealed that it was "whiteness" (the male professor's and that of the various students) that was set forth as the standard and that it was the absence of whiteness that became the criteria by which the students assessed the Black woman professor.

Examination of student-teachers interactions further supports the contention that whiteness was the major factor shaping classroom dynamics. It was noted that the following interactions were commonplace in the Black woman professor's classroom: 1) challenge to knowledge dissemination, 2) teacher/student confrontations, 3) classroom crosstalk, and 4) reinterpretation or disregard of classroom protocol. These issues were not seen in the male professor's classroom. Considerations such as teacher control, personal style and individual group student behavior were eliminated as contributing factors since peer debriefing revealed that these issues consistently surfaced in the classrooms of Black male and Black female professors and

conversely rarely surfaced in the classrooms of White male and White female professors. In addition the peer debriefing also helped to remove gender differences as a possible contributing social construct since White women professors' experiences did not parallel those of Black women professors.

Upon reviewing the routine experiences of Black instructors and reflecting on his practice the White male professor remarked, "I cannot imagine having a student confront me about a question on an exam. This has never happened to me. This has never happened to anyone I know." He further observed that he is always seen as a disseminator of knowledge and as a power figure in the classroom. Indeed during the course of this class his attempts to share power by establishing self governance in the classroom was consistently thwarted and rejected by the students. Whereas, the Black woman professor reported that she routinely experienced the opposite -- students actually gathered in cliches and attempted to determine the direction of the course.

Whiteness (the professor's and students') posits itself as a normative factor which is synonymous with competence, intelligence and power. Therefore "otherness" is seen as the direct opposite of whiteness and its accompanying virtues. So that a professor and/or student who possess "otherness" enters the classroom in a deficit mode. This was well illustrated in one of the student interviews in which the woman professor's performance was discussed,

I heard bad things about her. I know a person who had a negative experience in her classroom. She said you don't learn very much and she spends all of her time talking about her family. But that was not my experience. She was a great teacher. I learned a lot ... I guess she straightened up after she got bad evaluations.

Follow up questions revealed that it did not occur to the student that the report she had heard might have been false. In the exit interview the Black professor lamented, "That's the one thing I don't count on from my students or from society in general, 'the benefit of the doubt.' "

The isolation of the positionality of whiteness as the most major factor affecting positionality in the classrooms studied holds significance for the power dynamics in the continuing education setting because adults, who are more entrenched in their life roles, are more likely than are children to be aware of their positionality, its attending privileges and hierarchial status. It follows that adults act out such entitlements consciously or subconsciously.

Discussion

This study showed the many complex ways in which the power relations in the larger society are played out in continuing education classrooms and how they directly influence the teaching and learning process. Students in both classes were very conscious of how the classroom was organized around power relationships. They monitored both teachers' behaviors and exchanges with other students. This was typified by a student in the seminar class who felt that one student in the class attempted to always "sit next to him (the professor) as if that would give her a position of power." All the students interviewed in the research class talked about one student who took up more than her fair share of class time. One participant stated: "There was one girl who took up quite a bit of class time and (the teacher) was conscious of that...and tried to balance it." A second student also took note of the teacher's attempt to balance the vocal student's class comments and observed that after a while the outspoken student understood what the teacher was attempting and would try to monitor herself and would make apologetic comments such as "Well, this is my last question, but..." The students' experiences evidence a tendency to want an interactive classroom where teachers attend to issues of who talks the most and who listens the most. The students interviewed were aware of how the classroom worked and where they stood in terms of power. In the seminar class the students expressed an interest in wanting more "mediating" by the professor. Although the students in the research class described the overall atmosphere as positive and democratic where "everyone was allowed to express their opinions," they still said that they experienced uncomfortable moments that centered on whiteness and blackness regarding how the power was negotiated by the teacher.

Both classes clearly wanted direction from teachers and also wanted classroom power dynamics arbitrated, but varied along individual and race lines as to their definitions of the ideal. The traditional purveyors of power in classroom settings, White males, communicated a greater comfort level in a "facilitation model" than the White males in the research class where the dynamics were mediated by the teacher. This is understandable given that the "facilitation model" would reinforce their place of dominance in the classroom hierarchy. However, the element of positionality must be factored into the study. The students felt that the White male professor did not have an agenda in the seminar class which dealt with issues of race, class, and gender. Yet, they repeatedly referred to the Black woman professor who taught the research class as having a political agenda. Such an analysis does not logically fit the situations and thus we attribute this to the

students' perceptions of the Black woman as a gendered and racialized figure and their perceptions of the White male professor as a traditional objective disseminator of knowledge without a race, gender, or class position in society. The students wanted more direction from the male professor yet referred to the attempts by the female teacher to make the learning environment participatory with negative comments.

This study showed that the continuing education classroom is not the neutral educational site referred to in the literature. Instead it is a duplication of the existing societal relations of power replete with hierarchies and privileges conferred along lines of race, gender, class, sexual orientation and other status markers. The study also suggests that the perspective seen by the teacher is one that is visually impaired by their own viewpoint. During the study, the professors involved practiced cultural therapy (Banks, 1994) by examining and discussing their own cultural assumptions and by providing an analysis of what was occurring in the classroom. While many of their suppositions proved consistent with students' views, especially regarding uncomfortable classroom issues, other incidents that seemed trivial to the professors were significant to the students. This would suggest that positionality is a critical lens for interpreting continuing education classroom experiences. In sum, we conclude that the facilitation model does not account for the many power dynamics in these classrooms. We suggest further efforts are needed to better understand how societal power relations affect teaching and learning efforts and what responses educators can make to negotiate these issues.

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KNOWLEDGE WORKERS AND THE OFFICE ECONOMY

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Introduction

The emergence of the global knowledge economy, driven by globalisation and technological change, has influenced the type and structure of work in Australia and around the world. The changes in the Australian economy and labour force over the last quarter of a century have been significant. This has been a time of persisting unemployment and long-term unemployment; an increasingly part-time, contract and casual workforce; a labour market in which education is becoming more of a pre-requisite; privatisation, deregulation and downsizing of public services; and more pressure on businesses to increase productivity (Doyle, L., Kerr, E. & Kurth, B., 2000, p. 1).

In this environment Australia needs a highly skilled labour force to remain competitive in the global market place, and individuals and enterprises require the skills to adapt to change (Wright, S. 1997, p.7).

Recognising this imperative, three of the key objectives which underpin the national strategy for vocational education and training (1998 – 2003) are: equipping Australians for the world of work, enhancing mobility in the labour market and increasing investment in training (Australian National Training Authority, 1998, p. i).

In order to realise these objectives it is important to be able to predict the skill needs of the future labour market. Education and training systems have a critical role to play in meeting the skills demands of the future labour market, to prepare Australia for the challenges of the future.

Traditional approaches

Predicting the skill needs in a changing labour market relies, at least in part, on an analysis of past trends. In this there are various ways to study the changes that have occurred. In Australia, economic data has traditionally been organised using industry classifications, such as the Australian and New Zealand Standard Industry Classification (ANZSIC), or occupation classifications, such as the Australian Standard Classification of Occupations (ASCO). Each of these classifications focuses on a different aspect of business and therefore each provides a unique perspective on the workforce. For instance, the industry classification provides data on industry goods and services, while the occupation classification provides data on job type trends and the changing demands of employment.

It appears, however, that these traditional classifications are limited in their ability to capture the changing trends in the new-world economy. The world of work is changing dramatically and the traditional, industrial labour model may no longer be useful in gauging workforce trends in this context (Australian Business Foundation Limited, 1997, p.4). An approach developed in the United States by Carnevale and Rose (1998) provides an interesting insight into the labour market changes arising from the emergence of the knowledge economy.

The function approach

Carnevale and Rose developed a functional approach to analysing the US labour market, utilising a combined industry and occupation methodology. Carnevale and Rose firstly classified the workforce according to occupational groupings and then classified the workers in each of these groups according to the industry in which they work, narrowly defining the *function* of the work that these people did based on the direct and indirect contributions they made to the industry.

The functional approach taken by Carnevale and Rose resulted in the following groupings, using a work site *key* to make the categories more readily understood. These can be seen in Box 1.

Box 1: The five broad function groups

The Farm: represents goods-producing extractive industries;

The Factory: represents goods-producing industrial production;

The Counter: represents low-skilled services;

The Hospital/Classroom: represents high-skilled services; and

The Office: represents administration and co-ordination.

The first two functions are goods producing functions, whilst the third and fourth are consumer service functions. These function groups include only the direct labour necessary to perform the task. The final category, defined by Carnevale and Rose as the Office, includes all activities involved in managing public and private affairs – including employment in front offices, finance, insurance and real estate, companies providing services to other companies, public administration, and non-profit membership organisations (1998, p.6). Office economy people are employed to trade knowledge - they are knowledge workers.

The US project yielded valuable insights into the changes in the US labour force and economy over the past 50 years, showing that there has been a massive increase in employment and earnings for skilled workers in the US and an increase in the Office economy - providing evidence of the growth in "knowledge work".

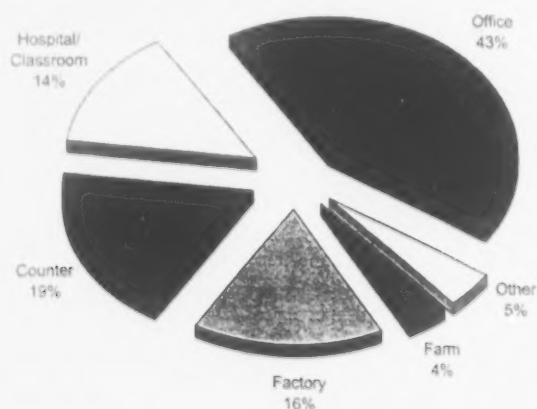
The Australian study

The basis for this paper is research undertaken by the Australian National Training Authority (ANTA), underlying the *Knowledge Work: The rise of the Office Economy. Full Report* (Doyle, L., et al, 2000). This research replicated the Carnevale and Rose study, applying the functional methodology to Australian survey data from the last five Censuses (1976, 1981, 1986, 1991 and 1996), collated and concorded by the Australian Bureau of Statistics (ABS), Brisbane office. The same methodological approach as well as the same function group and job type terminology were adopted, as defined by the US study, to aid in comparability between the studies (Doyle, L., et al, 2000, p.12).

The results of the Australian research indicated that the broad changes that occurred in the United States were similar to those that occurred in Australia, particularly in regard to the growth of employment in the Office, but dissimilar in regard to job level changes (Doyle, L., et al, 2000, p.5).

The changes to the Office workforce in Australia over the last 25 years are important in providing an understanding of the new skill requirements of the future labour market. Knowledge work is a growing area of work in Australia, brought on by the emergence of the global knowledge economy, and the Office function group in the Australian study provides a valuable insight into this workforce.

Figure 1: Function groups in Australia, 1996

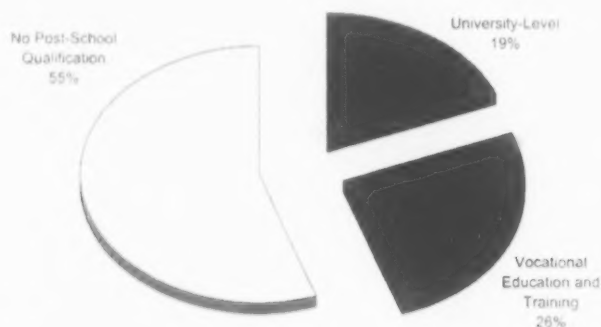


In 1996, the Office accounted for the largest proportion of the Australian workforce, at 43 percent (see Figure 1). This was an increase from 37 percent recorded for 1976, equating to an overall growth in the number of people working in the Office of 55 percent over this time. The Office is now the workplace for the single largest group of Australian workers, accounting for around 3.3 million workers in 1996 (Doyle, L., et al, 2000, p.8).

Knowledge and skills in the Office

The skills that the Office required in 1996 are different to those from 1976. Over this time there has been an increase in the qualifications profile of workers employed in the Office. In 1996, 45 percent of Office workers had a post-school qualification (see Figure 2), an increase from 26 percent in 1976.

Figure 2: Qualifications profile of the Office, 1996



Around 42 percent of all employees with university-level qualifications worked in the Office in 1996. In 1976, the equivalent proportion was 21 percent, with the remainder largely concentrated in the Hospital/Classroom, at 73 percent.

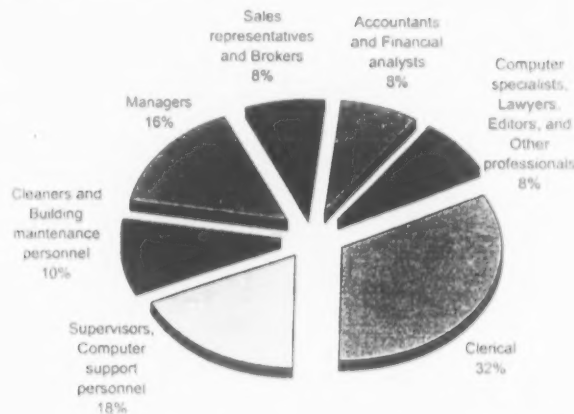
Graduates with vocational education and training qualifications as their highest level are also heading for the Office in ever increasing numbers. In 1976, 37 percent of all employed vocational education and training graduates were working in the Office. The largest proportion (40 percent) was employed in the Factory. By 1996 a shift had occurred whereby 44 percent of workers with vocational education and training qualifications were working in the Office, and only 26 percent were employed in the Factory.

These findings suggest that in recent years the boundaries between education and training are becoming less distinct (ABS, 2000c, p.263; DETYA, 1999, p.10). The trend towards seamless education and training pathways has been part of the change from the traditional notion of education. Vocational education and training students are no longer primarily destined for industrial, manual or frontline services jobs. In fact, vocational education and training graduates were more likely to be employed in the Office during 1996 than in any other function group (Doyle, L., et. al., 2000, p.7).

Office work

The Office commanded almost half of the total earnings pool for all of the five function groups in 1996 (Doyle, L., et. al., 2000, p.17). This was largely due to the sheer volume of workers in this group. The average annual income for the Office in 1996 was \$32,400, \$200 short of those received by the average Hospital/Classroom worker, at \$32,600. The trend through the late 1980s was for Office earnings to increase dramatically, and it can be expected that this trend will continue, eventually providing Office workers with the highest average wages in the Australian workforce.

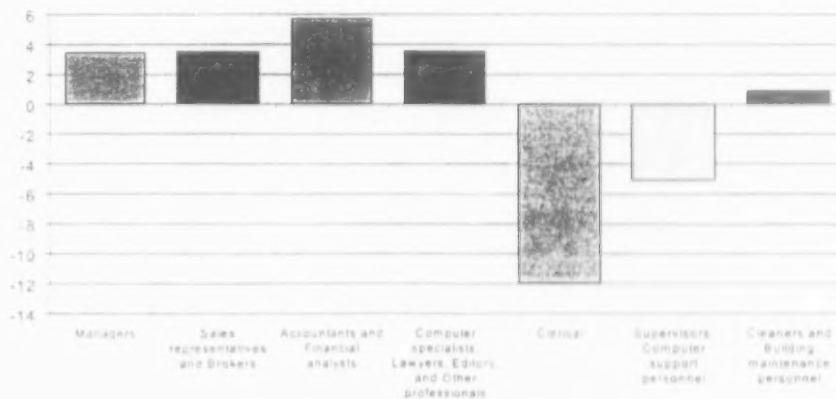
Figure 3: Occupations in the Office, 1996



The Office consists of a number of occupations (see Figure 3), each with a diverse array of work arrangements, such as longer or shorter hours of work, and differences in average earnings. Managers are at the higher end of the earnings spectrum within the Office, earning approximately \$45,400 per annum on average in 1996. Around 89 percent of these workers spent more than 35 hours per week at work during 1996. On the other hand, Clerical workers tended to work shorter hours, with only two thirds (66 percent) working more than 35 hours per week. The earnings of Clerical workers in the Office has changed little in constant terms (1996-97 prices) over the time since 1976, recording an average income of around \$24,100 in 1996.

Changes in the structure of work in the Office since 1976 have seen an increase in high-skilled workers employed in high-paying occupations by 1996, as shown in Figure 4. The work done by the Office workforce has shifted towards such areas as management, finance and information brokerage. Although Clerical and Support workers constituted the majority (51 percent) of Office workers in 1996, the share of Office workers employed in these occupations has decreased by 17 percentage points over the time since 1976.

Figure 4: Change in the share of occupations in the Office, 1976 to 1996



On average, the Office in 1996 consisted largely of time-intensive jobs, with 76 percent of the Office workforce working more than 35 hours in an average week. This proportion is only slightly larger than that for the total workforce, at 72 percent of all workers in 1996.

However, there has been a fundamental shift in the arrangement of work in Australia over the past 20 years. Time series data from the ABS Labour Force survey (November 1980 to 1999) suggests that the proportion of employees in Australia who work full-time hours, 35 to 44 hours per week, has declined from 49 percent of all workers to 37 percent over the 20 years since 1980.

The nature of work itself is changing, and traditional methods of analysing and describing the work that exists in the workforce do not seem to apply in this environment. While it appears that Office workers have remained quite resilient to these changes, with regards to hours of work, the wider effects of the new labour market have also brought about changes to the type and permanency of jobs in Australia. The notion of a permanent, full-time job is disappearing and workers require the skills necessary to manage and adapt to these changing work arrangements.

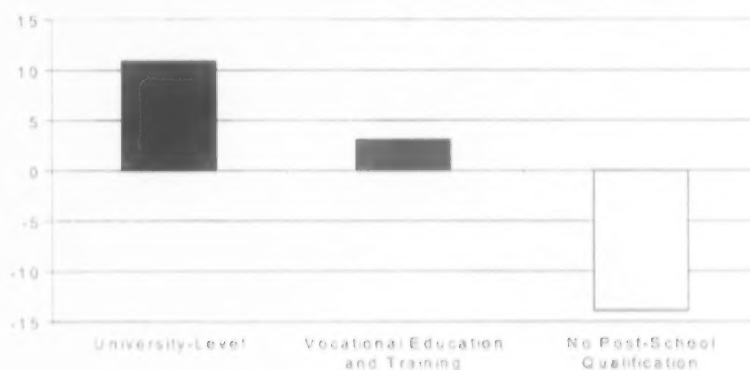
Knowledge work

Post-school education and training, especially higher education, traditionally provided people with the skills needed for future employment in the Hospital/Classroom, which employed 73 percent of the university-level educated workforce in 1976. Workers in this group included health professionals, teachers, lecturers and technicians. In contrast, business or industrial workers tended to enter the workforce straight from school, undertaking on-the-job training and remaining in their job on a full-time, permanent basis.

Changes in the labour market have since increased demand for workers with more education and high skill levels. The school to work transition is becoming more difficult, and young people are staying at school longer and entering into post-school education and training in larger numbers than before (ABS, 2000a, pp.93-94).

In recent times post-compulsory education has become more *vocational* in both aim and coverage (Doyle, L., et. al., 2000, p.24; ABS, 2000c, p.263; DETYA, 1999, p.10). There still remain a large number of academic courses offered by educational institutions, but the integration of job specific and practical study with traditional forms of education has been occurring across a wide variety of learning areas, including upper secondary education.

Figure 5: Change in the qualifications share of the Workforce, 1976 to 1996



Increases in the share of educational qualifications held by workers indicates that the importance of post-school qualifications in the Australian labour market is growing, as shown in Figure 5. The figure shows that there has been a large growth in workers with university-level and vocational education and training qualifications since 1976. The share of all workers with higher education qualifications has increased from around 9 percent in 1976 to 20 percent by 1996. Over the same time, the share of workers with vocational education and training qualifications as their highest level rose from around 23 percent to 26 percent of the workforce.

As a result, there has been a decrease in the proportion of the workforce without post-school qualifications. In 1976, approximately 69 percent of the workforce were without a post-school qualification, dropping by 14 percentage points to 55 percent by 1996.

The shift in the qualification profile of the workforce has occurred across all of the five functions identified in the research. That is, each function group has recorded growth of around 14 percentage points in the share of their workforce with post-school qualifications since 1976. The strongest growth over this time has occurred in the Office, with the share of Office workers attaining post-school qualifications increasing by 19 percentage points to 45 percent by 1996.

The benefits of attaining post-school qualifications can be seen through the job share of workers with university-level and vocational education and training qualifications. That is, these workers benefit from

attaining such qualifications in the form of employment in high-level, high-paying jobs, particularly those in the Office (Doyle, L., et. al., 2000, p.44).

Concluding comments

This research has highlighted the changes in the skill requirements and work undertaken by the Australian labour force and what it means for the future: more Office workers - more knowledge workers.

A combination of new technologies, increased global competitiveness and economic restructuring has caused a revolution in the type and nature of the work that people do. Traditional notions of the labour force seem to no longer apply, creating a need for new approaches to monitoring the workforce. The approach adopted for the research by Doyle, Kerr and Kurth (2000) shows that Australia has experienced a considerable growth in workers employed in high-skilled, high-paying jobs. These are Australia's Office workers. Office workers received some of the highest earnings, and the number of people employed in this function increased considerably during the past 25 years.

A significant implication of this research for vocational education and training, in particular, is that vocational education and training graduates are not just destined for the Factory or the Farm. Most vocational education and training qualified people are employed in the Office.

Education benchmarks are rising and the school to work transition is becoming more difficult for young people. In order to make a successful transition to work, people are increasingly required to attain post-school qualifications, as well as the skills to adapt in an environment of change. Education in Australia has been extending beyond the traditional areas to include practical and work skills. Data from this research highlights the fact that people with post-school qualifications fare better in the labour market than those without post-school qualifications in terms of increased earnings and access to higher job levels.

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TEACHING WITH GLOBAL AWARENESS: PERSPECTIVES ON ISSUES CONFRONTING ADULT EDUCATORS

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Introduction

At a time of resurgent interests in globalization, more and more adult educators are realizing that they have a critical and substantial task to do – to build competencies (skills, knowledge and attitudes) for participation in globalization (Gouthro, 2000; Walters, 1997; Harris, 1996; Beveridge, 1996). Evidence from the literature and professional gatherings, such as, conferences, seminar and meetings, suggests that many adult educators have become not only captivated by globalization, but in various unspoken ways they have come to view globalization as an invincible challenge that must be accepted, supported and advanced in the field. However, our support for globalization does not come without challenges and difficulties. For example, the field is still inconclusive about the role of adult education in globalization. Accompanying this inconclusiveness is some conflicting and different prescriptions, suggestions and claims about what globalization means and how it should be served in the field of adult education. Different writers see globalization and its significance in adult education through various spectra of practices and thoughts.

In my view, one of the major contributing factors to the difficulties facing adult educators in their support of globalization is the fact that far less attention has been paid to the critical question – what does globalization mean to us, adult educators?; yet a number of adult educators acknowledge the versatile and complex nature of the concept of globalization (Oduaran, 2000; Gouthro, 2000; Brown, 1999; Harris, 1996).

The question, "what does globalization mean to adult educators?" is intended to lead to a common understanding of globalization. By a common understanding, I do not advocate for a universally accepted definition; to do so is counterintuitive to the multiple goals, traditions, contexts of our practices that shape and influence our understanding of concepts. Adult education is known to be a dynamic and heterogeneous field of practice and it remains so during this era of globalization. Nevertheless, adult educators need to find a comfort zone from which to address issues of globalization. Globalization promises to bring adult educators together in a global context, and, to work as partners within this context, we need a clear starting point. In my view, a substantial starting point is an understanding of the concept being actualized through our practices, that is, globalization. I think we have rushed to serve globalization before understanding what it actually means to us. This concern is expatiated later in the discussion.

In addition to the question, 'what does globalization mean to adult educators?' this paper raises other questions that need to be put on the decision-making tables for adult educators to approach globalization challenges with common understanding and vision, and to decide on issues of competencies, that is, skills, knowledge and attitudes, needed for participating in globalization. Among the important questions are: What is global competence? What competencies are essential for adult educators' participation in globalization? How do adult educators make themselves accountable to both the local and global contexts when deciding essential competencies for their participation in globalization? Are there some skill-areas that make an exceptionally non-discriminatory contribution to the future careers of adult learners and their participation in the globalization game?

In presenting these questions, I acknowledge that this paper is not the first, and is surely not the last, to address competencies needed for participating in globalization. As such, these questions are raised as 'food-for-thought' exercises that challenge adult educators to continue to address the challenges of globalization in a collaborative spirit. We can make great difference to our current understanding of globalization by keeping the spirit of sharing and learning from each other alive.

Before I present the questions and proceed with the discussion of the questions I raise, I offer some perspectives on globalization. This gives a background for understanding the significance of the questions I raise and the content and context within which they are discussed.

Perspectives on Globalization: General Views

Understanding the concept of globalization

Careful observation and familiarity with the concept globalization and its literature reveals that globalization is not just a fashionable term, but it is a very confusing and highly complex phenomenon that lends itself to different interpretations, implications and practices. It is therefore necessary for adult educators, as partners

in globalization, to familiarize themselves with the nature of this concept, especially, how it is interpreted, understood and tolerated. Moreover, it is essential for them to think of the implications of its interpretation as they consider ways of preparing themselves and their clients to face challenges and make use of the opportunities of the globalization.

The basic justification for advancing and supporting globalization should depend more on adult educators' understanding of this phenomenon, first, as a concept, then, as a process. This contention was made, previously, by some adult educators including Brown (1999) and Harris (1996) who are concerned, as I am, about the confusing and conflicting perspectives that are emerging in the literature of adult education on the interpretation of the concept of globalization. We urge adult educators to investigate how globalization is being conceptualized and interpreted. Understanding the concept of globalization is the most important step towards knowing how to accommodate it in adult education practices. Adult educators need to ask themselves a basic question 'what does globalization mean to us?'

The situation, as I see it, is that efforts have been diverted away from this basic question and directed towards finding ways of accommodating globalization within the practice of adult education. Ample literature in adult education is emerging that addresses issues, such as, the changing structure, form and role of adult education; the reshaping, reforming or re-visioning of adult education in the globalization era (Walters, 1997; Mayo 1996; Harris, 1996). Other issues deal with the place of globalization in the existing forms of adult education (Oduaran, 2000; Miles, 1999; Mojab and Miles, 1999; Hall, 1999). While many adult educators may appreciate these efforts, there is still need for these kinds of efforts to be accompanied by a clear understanding of the phenomenon being actualized. It is imperative that adult educators take a step backward, look where they come from regarding their support of globalization and assess their understanding and significance of this concept in their practices.

Why is it important that we understand the concept of globalization?

Anyone who takes a closer look at the literature of adult education and globalization will realize that adult educators are still on a long journey to reaching a common understanding of globalization, either in ways that honor its economic basis, global assumptions and competitive goals (Harris, 1996; Magesa, 1999) or, in terms of how it fits in the field's philosophies, goals, purposes and practices. Right now, there are conflicting opinions and controversies over what this concept means and the significance of its meaning to adult education practices. Oduaran (2000) and Brown (1999) observe that there are different interpretations of globalization. The term remains unclear, ambiguous and confusing to many adult educators, despite the fact it has become a key issue in many debates that seek to understand globalization and its influence and challenges for the adult educators.

Brown (1999, p. 3) has observed that the term globalization "has been used indiscriminately and often in a highly uncritical way". This indicates that adult educators, as critical pedagogues, have a critical role to play here - they need to subject the term globalization to scrutiny in an effort to find a common understanding of it. Trying to situate globalization in adult education discourse without a clear conceptualization of it is akin to Freire's metaphor of "jumping on the train in the middle of the journey without discussing the conditions of the journey" (Freire, 1998, p. 113). A lesson that adult educators can learn from Freire's metaphor is that it is unwise and very dangerous for them to move with the waves of globalization without understanding what globalization actually means. The safest thing for them to do is to try to interpret and understand globalization prior to putting up efforts of actualizing it. Trying to support and advance a phenomenon without a clear conceptualization of it is also tantamount to hampering the very efforts directed at supporting and advancing it, thus, it is detrimental to adult educators' interests and potentials in participating in the globalization process.

Divergent reasons contributing to the complexity of the concept of globalization have been suggested. Writers, such as Harris (1995) and Brown (1999) attribute the confusion inherent in globalization to the pliable use of this term. Brown (1999) further sees the portentousness and vagueness of globalization as possible contributing factors to its complexity. Still, other writers such as Freire (1998) and Magesa (1999) believe that inherent in this concept is the capacity to tame or frustrate efforts directed towards understanding it. When efforts are frustrated, people are bound to accept globalization as a necessity that should not be questioned but accepted as an inevitable destiny, yet, there are those who believe that globalization "is a human creation and a social rather a natural fact [that] lies within the realm of a human choice" (Beveridge, 1996, p. 68). People like Henriot (1999) and Magesa (1999) believe that the confusion inherent in this concept works as a strategy for keeping people in the dark about what globalization actually is. Freire (1998) shares the same concern with Magesa and Henriot and calls this type of use of the concept a form of control by consent. Against the background of these claims therefore, it makes sense to infer that because of the term's confusing nature, many people might have been pushed into accepting and including it in their agendas without much understanding of what they are actually inviting into their business.

On another level, the complexity inherent in the use of the term globalization makes it susceptible to what Fierke (1998) calls the 'language game'. Fierke contends that the term language games "is often used in a disparaging way to suggest that a person is playing with words or maneuvering with language rather than being sincere" of what he or she actually means (p.16). This suggests that the term globalization may have been strategically chosen for use in this era because of its confusing nature as reflected by its dynamism, vagueness and pliability. Harris (1996) also observed this kind of 'language game' with the use of the concept, globalization, and refers to it as intellectual mulching. It is therefore imperative that adult educators understand that the interests embedded in the concept globalization may influence and determine the decisions they make of advancing and supporting globalization.

From the preceding discussion, one is safe to conclude that globalization remains complex, ambiguous and confusing to many people. Despite these confusions, an emerging body of literature on adult education and globalization (Oduaran, 2000; Gouthro, 2000; Brown, 1999; Cruikshank, 1998) shows that adult educators are accelerating their efforts in support of globalization. There is no intention of holding back this progress. Rather, the progress needs to be nurtured and sustained, and, one of the nurturing factors is an understanding of the concept of globalization. The way adult educators understand globalization will inevitably determine what they do to support and advance globalization.

Fundamentally, it behooves adult educators, as practitioners in their own field, to understand the complexities inherent in the concept of globalization. Understanding these complexities will not only prepare themselves for the divergent and conflicting views that may accompany their support of this phenomenon, but they also acknowledge their duty as critical pedagogues. The key element for critical pedagogues is to question the meaning of globalization and its significance in teaching for global competence. The fact remains that if globalization is complex, ambiguous and confusing, then, its implications for adult education practices are likely to be compounded by these complexities. If adult educators can direct more efforts to revealing the essential complexities and biases of this concept, they may emerge with a better understanding that will lead them to an informed analysis and consideration of how globalization should be supported and advanced in adult education.

Essentially, some adult educators have suggested some possible ways to understanding globalization. Harris (1996), for example, contends that "the first challenge for adult educators is to raise awareness that globalization is, in fact, a phenomenon driven by economic interests, advanced purposefully and deliberately by the business sector for its own benefit"(p. 6). Harris' suggestion provides one potential way of making sense of globalization. In many instances, an understanding of the concept of globalization seems to depend on where one stand in respect of its basic assumptions and rationale. One may take a supportive or unsupportive stance, or whatever stance is reasonable, depending on the contexts of its application. Honestly, the way adult educators understand globalization will inevitably determine what they do to support and advance it.

The surest thing about globalization is that it provides a structure for adult educators to come together, share concerns and challenges in a mutually collaborative manner. It is, in my view, a dramatic experience for adult educators from their respective local contexts to come together in some informative and beneficial ways to share experiences, knowledge and skills as they work collectively towards building competencies for their successful participation in globalization. Globalization then, is unmistakably a partnership; and in a partnership respect for both individual's and the partnership's interests is important. In this type of partnership, success requires a common understanding of what is being promoted and a joint search for solutions to challenges facing the partnership. In case of globalization, adult educators, among many issues, are challenged to address the economic aspects of adult education. In its economic functions, adult education caters for the needs of their clientele defined in terms of the demands of the organizations for which they work. More emphasis should be placed on vocational education and other education for preparing the workforce to participate and compete in the global market. That is, adult educators need to build skills, knowledge and attitudes that will make their clientele employable and productive in world characterized by competition and high profits. We need to help each other to be effective competitors, as employers or employees, in our local and the global situations. More important, our partnership in globalization is functional to the extent that it makes individuals become more engaged in their local context with a view to working towards global competence.

What does global competence imply?

Much of the current debate on adult education and globalization is centered on the role that adult educators have to play to prepare themselves and their clients to participate in globalization. Global competence is therefore considered a gateway into the opportunities of globalization. Global competence implies that adult educators equip their clients with knowledge, skills and attitude that may help them to function effectively in the globalization era. Competence is functionally related to specific contexts and is relative to specific needs. So, when adult educators think of competence, they need to think of it in ways that honor its specific context-boundedness. And, in considering global competence, there are two important contexts that adult educators should consider, the local and the global contexts.

The local-global contexts

Everywhere in the world, people improve their competencies based on the challenges they experience in their defined local contexts. Therefore, in thinking of competencies for globalization, adult educators need, first, to explore what individuals do in their immediate/local contexts. The local contexts refer to respective specific contexts within which adult educators operate, such as, the organizational, regional or national situations. These contexts are important decisive factors of the competencies germane to adult educators' meaningful participation in globalization.

The experiences that adult educators share in professional and scholarly meetings, such as conferences, seminars and workshops, including the literature, bear evidence to the claim that the local experiences and contexts matter a lot when considering competencies for participating in globalization. A brief discussion follows that demonstrates my contention of the importance of the local context. The global context, on the other hand, expands our vision and interests beyond our immediate local environments -organizational, regional and national, to the international and global situations. Both the local and global contexts have specific role to play when issues of globalization are discussed. However, a disturbing observation made by Harris (1996) is that in many instances where the global context is entertained, there is a tendency to trivialize the importance of the local. He then urged adult educators to "address the growing trivialization of what is small, particular and local" (p. 8). This is an important suggestion because the local experiences cannot be trivialized if participation in globalization demands concerted efforts of adult educators from diverse contexts. Both the global and local contexts are important when discussing competencies needed for participating in globalization. In the discussion that follows, I touch on the question of the local-global connection and its significance when considering global competencies for participating in globalization. I emphasize strongly that the local context has a significant influence and an important role to play in what goes on in the global context.

Why do I say the local is important?

It is a fact that globally, adult educators engage in different skill-areas and knowledge acquisition in preparation for the challenges and opportunities of the globalization era. The knowledge and skills they seek are those that they can apply to benefit their own specific situations. It is from this perspective that I believe the local context should be considered first when adult educators think of ways of developing competencies for participating in globalization.

In their search for competencies needed for participating in globalization, adult educators need to explore what individual adult educators do in their distinct contexts. This, they can do by paying special attention to the experiences that adult educators share in professional and scholarly meetings, such as conferences, seminars and workshops, as well as in publications and any other information whose access is not restricted. Every experience shared in the conferences, be it at the 1995 "Globalization, Adult Education and Training" international conference held in South Africa; the 1997 Fifth international conference held in Hamburg; or the 2000 "Working Knowledge: Productive Learning at Work", an international conference in Sydney, Australia, indicates that attempts made to improve competencies are based on individual experiences of globalization within their specific contexts. If adult educators are to pose this question - what competencies are essential for adult educators' participation in the globalization era? answers or choices of essential skills, knowledge and attitudes will be influenced by individuals' unique experiences and perceptions of what it takes to participate in the process of globalization. It is therefore not worth our efforts to try to ignore or trivialize the local. The local context matters more than ever before in this globalization period. Respecting the local contexts may help adult educators to avoid the submergence of important local needs and interests into what Henriot (1999) calls "the trap/steamroller", as he perceives globalization.

The push towards competencies for participating in globalization comes as a result of individuals' experiences of globalization in their own unique contexts. Therefore, when we think of competencies for

globalization, we have to consider both the local and global contexts. The local context normally comes first bringing with it the global context. The global context then takes cognizant of various local experiences resulting in a conglomeration of experiences that can be tapped to be more beneficial to a number of local contexts.

How do we (adult educators) make ourselves accountable to both the local and global contexts when deciding on essential competencies for participation in globalization?

It is important for adult educators to know that deciding on skill-areas, knowledge and attitudes essential for their participation in globalization is one of the most difficult decisions to take, bearing in mind the complexity inherent in globalization, as well as the heterogeneity and pluralistic needs and nature of adult education practical contexts.

The question, 'what competencies are considered essential for adult educators' participation in globalization?' opens an important debate for adult educators to assess various local expertise and needs and see how these interlink in ways that may contribute to competencies essential for participating in globalization. Two contexts are therefore unmistakably important when discussing competencies for participation in globalization, the local and the global context.

In my view, the dramatic experiences of adult educators in their respective local contexts provide exciting and rich contents for adult educators to decide on competencies needed for their participation in globalization. We can make great use of the competencies that are used in the local contexts for participation in globalization. Indeed, it is our duty, as partners in globalization, to dig into the local experiences and bring out generally acclaimed competencies (skills, knowledge and attitudes). These can be pulled together to form the basis for deciding on competencies needed for globalization.

The literature, for example, offers diverse competencies that constitute potential pool of skills, knowledge and attitudes needed for our fruitful participation in globalization. Everst and Berdrow (1998), for example, suggest four potential competencies, namely, managing self, communication, managing people and tasks, and mobilizing innovation and change. Merryfield (1995), on the other hand sees the main task for global educators as developing the knowledge, skills and attitudes that are the basis for decision-making and participation in a world characterized by interconnectedness. He suggests specific skills, such as, cross-cultural interaction, cross communication and interpersonal skills. Hall (1999) suggests technological and management skills are indispensable factors in participating in globalization. Some of these competencies have been applied fruitfully in a number of local situations. We are quite aware that many a-times experiences from diverse local contexts intersect in a very crucial way. It is this intersection that has a potential of contributing to global competence. Therefore, adult educators need to pull out these common competencies from respective local contexts, especially those that have great potential for contributing to globalization and bring them together as potential competencies for our participation in globalization. This will help adult educators to accommodate the diversity of adult education practices and experiences and create a rich pool of knowledge that may lead to a better fit of globalization in our practices. Considering local experiences is a great opportunity for adult educators to learn from each other, and this is what globalization should be all about, sharing experiences.

The focus I suggest adult educators should take when considering essential competencies for globalization seems to me to provide advantages. First and foremost, adult educators may promote cooperation between and among themselves and they will develop sensitivity and respect for the local contexts. Furthermore, the focus gives adult educators an opportunity to identify commonalities across the local contexts and this will help them to be better prepared to help each other. Still, the focus will help adult educators to see globalization in terms of local-global connection where the global context reflects both our independence as individuals in our respective local settings and our interconnectedness as partners in globalization. In this manner, globalization may rightly serve as a platform where adult educators address their specific local needs and blend these with the challenges of globalization. Our success in large part will derive from our ability to apply the best lessons we learned from our respective local contexts to further advance and support globalization. We will learn not only to be most responsive to our local situations but also how to broaden our perspectives to enrich our own pursuit of globalization. Furthermore, when considering globalization in the manner that I suggest, we make ourselves responsible and accountable to both the local and the global contexts. Gouthro (2000), for example, has advised us, adult educators, that we "need to forge a strong sense of purpose and direction to guide our individual teaching-practices and think deeply about issues and challenges facing us" (p. 58). The process that I suggests have a strong sense of direction and purpose and it takes care of the pertinent questions that form the basis of fitting globalization in our teaching-learning practices. When adult educators accept the challenge for competence building, they should be equally

prepared to attend to critical challenges and questions, such as the one I suggest may help them make informed decisions about supporting and advancing globalization.

Conclusion

An important observation by Hall (1999) is that adult educators are still searching for a definitive working mechanism for supporting and advancing globalization, and this proves to be a difficult search. For responsible and meaningful search, it is imperative that adult educators from various local contexts work together. This they may achieve by continuing to provide situations, such as meetings, seminars and international conferences, where adult educators meet and share experiences of globalization from their respective local contexts – organizational, regional and national situations. Guided by my deep sensitivity and respect for the local contexts, I propose, as a tentative plan, that adult educators should find ways of pulling together competencies from their local experiences that have aided their fruitful participation in globalization. Depending on the nature of the problems to be handled some competencies may focus more on the local situations while others can be made part of the strategies for tackling the challenges of globalization. Something would be lost if we disintegrate the local needs from our participation in globalization. It is important that we keep the local-global connection alive so that our partnership in globalization serves both our local and global needs. We should be reminded that global context is not a particular 'my, definitive and closed structure where the local ceases to exist; but, it is an open context which enable us to continue to learn from the local contexts and add new competencies to maximize our participation in globalization.

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ACCREDITING AND ASSESSING LEARNING AT WORK: QUALITY QUESTIONS FOR THE ACADEMY

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Introduction

The Partnership Programme, which enrolled its first students in 1991, was the first cross-university work-based learning degree in the UK. Learning on the Programme takes place through work-based projects combined with selected units of study. Students negotiate their individual programs of study with the help of a University tutor and a mentor from their workplace. The negotiated and individualised nature to the programmes reflects the trends toward the diverse and multidisciplinary careers that are the norm in both the expanding SME sector and the larger companies that are organised around multi-skilled project teams. Study is tailored to the professional development and career needs of the students, whilst providing their employers with the latest technical advances and business thinking. Employees from more than 150 companies have now studied on the programme achieving undergraduate and postgraduate awards.

A student's individual study program is recorded in a Learning Contract, which must be formally approved by the University. General guidance on Learning Contracts is provided through a course in Work-based Learning Management and the guide *Drafting your Learning Contract* (Lyons, 1999). The flexibility of the Programme enables the use of web and paper based distance learning materials and credit transfer of learning from other providers in the public and private sectors. The expansion of the Programme depends on successful collaboration with education and training providers and the companies who sponsor their employees through the Programme.

The Partnership Programme model was specifically commended in the Dearing Report (Dearing, 1997) as a model for future higher education-industry collaboration. Study on the Partnership Programme is now being offered to learners from outside the UK and the programme is being extended with provision of a Doctorate in Professional Practice. The Partnership principle has also been exported to a number of other Universities and colleges in the United Kingdom. The negotiated and work-based model of learning is now being replicated in the University for Industry's specification for Continuing Development Awards (University for Industry, 1999). The Partnership Programme and the University of Portsmouth are working in collaboration with the Ufi and other universities on the development of this scheme.

The prior learning portfolio

Applicants to the Programme review their existing learning by drafting a learning portfolio. Relevant experiential and academic prior learning that is proven by the portfolio can be accredited toward Partnership awards. Students are supported in making their application for prior learning credits through the guide *Application for the Assessment of Prior Learning* (Lyons 1998) and by joining an APL module. Accreditation of Prior Learning is based on the student establishing the authenticity, recency, relevance and sufficiency of the learning presented in the portfolio. The format is essentially a curriculum vitae expanded to include details of: the experiences that have led to learning; proven learning outcomes quantified as levels and volumes of learning; and initial thoughts on proposed learning.

Developing a learning contract

After the APL module the students join a Learning Management Group where they complete their induction to the program and develop understanding of Learning Contracts and work-based learning. Partnership students design, manage and deliver their new learning within the contract framework. As self-directed students they are faced with a number of real quality management tasks for which the Learning Contract serves as the management tool. To ensure the quality of the outcome, a learning contract must be approved in the way it sets out:

- the work based and other study;
- the intended learning outcomes;
- the thinking and justification behind the study program;
- the time within which the learning is to be achieved;
- the resources necessary to achieve success;
- the type of evidence that will be presented to prove the learning;
- the volume and level of the credit that the learning is worth;
- the criteria by which the learning will be graded.

For quality assurance purposes the student must also explain the coherence of the proposed study including the relationship between the parts and the connection between the new study and the accredited prior learning. Here the students are expected to refer to their professional career aspirations and learning needs that have been identified to achieve those ends. It is at this point that any issues about commercial and academic values, standards and knowledge are addressed. These issues will have been explored through negotiation with university tutors, company representatives and professional bodies, where relevant. Contracts are only accepted when all the stakeholders have reviewed and accepted the proposal and sign up to the contract. For the University the only limitation is that the contract only cover areas of learning in which the University has expertise that would enable it to contribute meaningfully to its assessment. In quality terms, the Partnership approach to the review and approval of contracts involves scrutiny of the justification, coherence, integrity and balance of the proposals.

Nick put together a contract involving: work-based projects including an in-house magazine development, within-company market research and research into company quality procedures; University study in Software Engineering; Marketing and Human Relations Management. This contract fitted his needs as the public relations manager in a computer company.

Award Titles and Transcripts

Coherence, integrity and balance all relate to the purpose of the study which, when achieved, will be reflected in the title of the awards made. These titles are deliberately generic, as in the following examples: Engineering and Management Studies; Applied Computing; Business, etc. Although these titles signify the fields to which the awards relate, they do not claim the fields are fully covered. Hence a Business degree need not cover the full range of disciplines (Economics, Quantitative Methods, Accountancy, Business Law, IT) covered in a conventional Business Studies course. The requirement is only that sufficient volume and level of credits, related to the area of study, are included. The content of the study program is fully and clearly presented in the award documentation in the form of an award transcript which records all the learning outcomes achieved and their level and volume. Award titles are offered in Applied Computing; Applied Science; Business; Business and Computer Studies; Engineering Studies; Engineering and Management Studies; Mathematics; Flight Dynamics and Evaluation, and Combined Studies. Other named subject areas for awards may be added as the need arises.

Accrediting Work-Based Learning

Work-Based Learning involves the knowledge and understanding gained through development projects at work, company training, attendance at professional conferences, independent research and learning new job roles. To establish the credit worth of such learning the Partnership Programme uses generic statements on the level and volume of credit for learning outcomes (Lyons, 1998 and 1999). Statements of level describe the intended learning outcomes for each level of study in terms of cognitive attainments and professional skills. Statements of volume are presented as general tariffs that indicate the likely nature of ten credits worth of work-based learning. Taken together these statements are used either to determine where to locate learning that has already been done, or to set appropriate learning outcomes for new work-based learning. Students are introduced to the use of generic statements whilst drafting their Prior Learning Portfolio claims and develop familiarity with them when drafting successive learning contracts.

The following is an example of a portfolio of work-based projects that accounted for the bulk of the final year of a student's Engineering and Management study program. This new learning built on prior learning in electronic engineering achieved through twenty-three years in the Royal Navy and study toward a Higher National Certificate in Electronic Engineering. Learning activities, outcomes, and credits are identified in this extract from a Learning Contract.

Learning Activities Portfolio

University Modules

Systems Engineering (E315)
Electronics at High Frequencies (E 366)
Project Management (EP 301)

Work-based Learning Part 1: The Topside Re-design of HMS ILLUSTRIOUS

This development project involves an evaluation and re-design of the topside arrangements on HMS Illustrious, with regard to Electromagnetic (EM) and Mutual Interference (MI) considerations in the siting of new equipment and re-fitting of transmitting and receiving equipment. The project is carried out for the Royal Navy and will involve close liaison between my office, the Platform Manager's office, equipment manufacturers and specific Naval Weapons agencies. This project may become security classified as work progresses and will be commercial-in-confidence.

Within the team working on the project my areas of responsibility include:

- *Planning, organising and assisting in the topside re-design of HMS Illustrious with regard to Electro Magnetic Compatibility EMC and MI;*
- *Comparing the siting and parameters of the equipment fitted before and after the study;*
- *Data measurement and collection on weapons parameters, on site ship surveys, modelling;*
- *Writing comprehensive reports and assisting produce CAD drawings on all aspects of the above findings.*
- *I may also be involved in a feasibility study, if required, on the benefits of using modern photographic and computer enhanced techniques in this work.*

Work-based Learning Part 2: EMC exclusion zones

To define and investigate the practicalities of having an EMC exclusion or "clean zone" within the hull or superstructure of future warships. The activities to involve:

- *research to identify all compartments on current RN platforms containing equipment either emitting classified EM radiation unwittingly or equipment susceptible to damage from intra or external ship EM radiation;*
- *establishing the viability of locating EM emitting equipment in the proposed EMC zone and the means of electrically isolating equipments to prevent unintentional EM emissions or interference.*

To put together a list of all MoD publications effected by these proposals, ie., Def Stans, Naval Engineering Standards (NESs) and Books of Reference.

Work-based Learning Part 3: The viability of fully Integrated Technology Masts for future warships.

An article is to be researched, written and submitted for publication. The article to report on the technical and design complexities in the developing trend in warship design where all ship's emitters and sensors are placed inside a composite material mast.

Learning Outcomes and Credits

On completion, I will have learned at a professional level:

- *increased knowledge of High Frequency Electronics, Electro Magnetic Theory, EM Radiation, Mutual Interference and EMC exclusion (30 level 3 credits)*
- *an appreciation of overall warship design including the use of Radar Absorbent Materials and the importance of EMC in warship systems (10 level 3 credits)*
- *the trends in advanced composite materials usage and associated specialist technical knowledge relevant to recent developments in mast design (10 level 3 credits)*
- *understanding of EM and MI measurement methods and the ability to calculate all parameters including: frequencies, blind arcs, wooding, etc. of all emitters and receptors so that EM and Mutual Interference problems can be minimised in future ship applications (10 level 3 credits)*
- *how to evaluate the cost effectiveness of EM and MI research tools in the new field of photometric technologies (5 level 3 credits)*
- *to be able to use CAD applications and computer modelling techniques (5 level 3 credits)*
- *Systems Engineering (10 level 3 credits)*
- *General professional skills*
- *project management and planning,*
- *time management and the use of personnel resources*
- *the use of libraries and agencies for technical and professional research*
- *how to negotiate (how to acquire ships drawing from official sources)*

- *how to become more reflective and constructively critical of my own work and analyse my abilities against relevant professional criteria*
- *how to write for a professional journal and enhance my professional presentation techniques.*
(20 level 3 credits)

Resources and Quality

As with any degree proposal consideration of the needed and available resources to support the program is of paramount importance. Work-based learning raises particular issues in relation to the time available at work and the company support provided for the project, including the provision of professional and material support and access to information. Because Partnership learning places emphasis on the development of projects that are of commercial and strategic importance to the employer, projects are online and, for the most part, scheduled within the learner's workload. However the additional academic requirement to contextualise the research and include extensive literature searches, beyond that required commercially, should not be under-estimated. The following resource analysis from the HMS Illustrious project demonstrates what is required.

Learning Resources

General:

- *Time, the most important element - make best use of all available time in the coming 12 months, prioritising work, rest and play.*
- *Professional support from colleagues within my team (they have been and will be briefed as my study progresses).*
- *Particular support from my mentor has been agreed.*
- *My existing networks within the RN and USN will be used and developed.*
- *Regular contact with the University - Make full use of facilities offered by staff and tutors, plus the facilities of the University itself wherever possible.*
- *Help and support from work colleagues, family and fellow students. Work colleagues are being very supportive, my wife understands the additional pressures for the coming months and I look forward to meeting and getting help from 'conventional' students during lectures and tutorials.*

Special requirements of the personnel and facilities relevant to the project(s) including:

- *Access to ships agreed in principle for measurements, physical and possibly electrical;*
- *Support of personnel from offices and agencies in and outside the Company and MoD;*
- *Discussions with Royal Naval, Ministry of Defence and DERA personnel at their "signatures group" with expertise in the fields of warship 'stealth' techniques;*
- *Time and guidance given by my mentor and others at work Southsea Shipbuilders and those at the parent company Clyde and Calderwood (Glasgow) Ltd. and other interested parties involved in the project(s);*
- *Information from a variety of internal and external defence and commercial sources - (I have a good working relationship with several Future Project and Future Design personnel, at SS, DERA and MoD Abbey Wood, and others);*
- *My company, has been very supportive to date and indicated that this support will remain throughout my course of study and beyond; PC and relevant software - I have a home computer workstation with a good selection of software and Internet access in my study at home. I also use a PC extensively at work, with versions of the same software. I can therefore use lunch times, etc for extra work on private projects as required for my degree, before copying it to floppy disk and taking it home. Disks used both at work and home will be cleared as non-restricted and virus checked by IT staff.*
- *Attendance at University modules:*
 - High Frequency Electronics*
 - Systems Engineering*
 - Project Management*
- *I have opportunities to attend relevant conferences and exhibitions. Last year I attended two major defence exhibitions: International Maritime Defence Exhibition and the Royal Navy and British Army Equipment Exhibition.*
- *Attendance at Abbey Wood Electronics at High Frequencies course.*
- *Attendance at BESA Advanced Project Management in Engineering.*

Texts to be consulted included:

Halliday, P. & Grolsch, K. (1999) *Electro Magnetic Theory in Design* Washington. Plato.
Pjorski, H. (1998) *Beyond the Beam*, London. Samuel Wells.

Assessment: evidence, criteria and the grading of achieved learning outcomes

Within the learning contract the learner details the proposed learning intentions as measurable and auditable outcomes, as above. Taught modules are proven through conventional assessments. Technical and theoretical work-based knowledge can be proven through reports for work, learning diaries and logbooks. Skills and competencies can be demonstrated in practice and through the production of artifacts, or the submission of testimonials by senior professionals. Additional learning not proven by the submission of the report, or other artifacts delivered to the company is written up in a learning report. For the HMS Illustrious project the evidence presented was as follows.

Evidence

- a) *Co-authored interim and final reports for NWBL 1 Topside Redesign of HMS Illustrious.*
- b) *EMC Exclusion Zones Report outlining research findings. The report to contain simplified Royal Naval ships drawings, and be classified UK CONFIDENTIAL.*
- c) *Technical paper to be offered to 'The Review of Naval Engineering' for publication.*
- d) *Examination in University modules.*
- e) *A self-evaluation report highlighting the key learning points obtained from the work, covering the above learning outcomes and clearly identifying my particular areas of responsibility within the project.*

To assist in the grading of work-based learning outcomes sets of standard grading criteria form part of the guidance information supplied to all Partnership mentors, students and tutors (Lyons, 1999). Students and their supervisors use these standards as the starting point for negotiating criteria directly relevant to the work-based learning being undertaken. As well as the proposed learning outcomes, the values of the academic and the employer are reflected in the resultant criteria. For the HMS Illustrious project the criteria developed were as follows.

Criteria for Assessment

- 1) *Understanding of EM Theory, MI and EMC exclusion zones such that I can confidently apply the principles to the redesign of the topside of HMS Illustrious.*
- 2) *Ability to evaluate and specify the job of redesigning a capital warship's superstructure, within the EMC and MI constraints of the proximity of fundamental frequencies and radiation paths.*
- 3) *Professional and company standards in research and evaluation.*
- 4) *Clear and comprehensive report writing techniques at a professional standard and in company format.*
- 5) *Writing skills at a publishable standard.*
- 6) *Ability to use CAD and evolve new photographic techniques and bespoke software to manage the task.*
- 7) *Professional standard Project Management and Time planning.*
- 8) *Understanding of and ability to make the business case for the project.*

Beyond the Partnership Programme

The Partnership Programme has helped the University of Portsmouth develop its own quality assurance in relation to Credit Accumulation and Transfer, APL, Learning Contracts and Work-Based Learning. Partnership work on standards and levels descriptors has also informed University practice. The University is now committed to expand its accreditation of off-campus learning, work-based curriculum and partnerships with industry. Variants of the original Partnership Programme are now emerging in different parts of the University in the form of:

- CPD Degrees involving private sector provision including web-based learning;
- Awards that include accredited Professional Institute Programmes;
- Company degrees;
- CATS awards incorporating credits from other HE providers;
- Awards involving APL, plus "Top Up" work-based and taught credits from a franchised provider.

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WORKING KNOWLEDGE AND WORK-BASED LEARNING: RESEARCH IMPLICATIONS

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This paper arises from the work of the UTS researching adult and vocational learning group and its analysis of work-based learning in higher education (Symes & McIntyre 2000). One aspect of that analysis is the 'de-institutionalisation' thesis— that work-based learning represents on the one hand, a de-institutionalisation of vocational learning, a movement of learning out of formal institutions, and on the other, a new institutionalisation of learning in workplaces, where what was informal, embedded and unrecognised is now to be recognised, valued and promoted by enterprises which desire more productive and 'performative' workplaces (Solomon & McIntyre 2000).

Underlying this analysis is a theorisation of the nature of educational institutions and institutionalisation. It is a paradox of so much scholarship in education takes for granted the nature of its institutions. At the same time, it is very natural to analyse work-based learning in terms of its distinctiveness, its informality, lack of structure and other features, through accounts which emphasise its difference from schooling and formal learning. Work-based learning can be readily portrayed in terms of theories of informal learning, and the attributes of 'adult learning'.

Though it is important to examine such features as 'informality' of work-based learning in comparison to formal courses, it is as important to understand how learning is embedded in work practices, and how employee learning is structured into organisational systems, and how individual commitment to learning within these systems is secured. From this point of view, what is important is not the analysis of workplace learning so much as the analysis of the ways that contemporary workplaces seek to develop a culture of productivity and performance—in other words, what it is about organisations that creates a press for employees to learn. This is as much about industrial as educational issues.

This paper will discuss—

- a research agenda for work-based learning arising from the analysis of 'working knowledge'
- a line of inquiry into the problem of the 'embeddedness' of learning in the workplace
- the related problem of researching how an organisational 'learning culture' is produced in enterprises.

A research agenda for work-based learning

To return briefly to the 'de-institutionalisation' theme, it is apparent this line of thinking could be quite productive in furthering research on work-based learning. As the 'Working Knowledge' essays suggest (Symes & McIntyre 2000), the emergence of work-based learning raises a host of issues that go well beyond the pragmatics of 'doing work-based learning'. The trend is seen as a symptom of fundamental challenges to vocational education. Thus, work-based learning in its radical form may be seen as a cause for rethinking our educational institutions, and educational practice in general. Work-based learning is taken to be a harbinger of fundamental change in institutions and not a temporary aberration soon to disappear.

A broad research agenda is outlined in Symes & McIntyre (2000, Introduction). This includes—

- Questions about the conditions bringing about work-based learning. How might it be possible to conceptualise the broad social and economic changes that are bringing about new partnerships between corporations and the academy and endorsing work-based learning programs as a leading educational innovation? To what extent is the state-led restructuring of educational institutions forcing this accommodation, and to what extent is it conditioned by other pressures for a 'convergence' of developments in the corporation and the academy and indeed, in society at large?
- Questions about the nature of working knowledge. In attempting to conceptualise the nature of working knowledge, what understandings of 'knowledge' are we working with? How does work-based learning challenge our existing theories of knowledge, particularly as these have been shaped by academic experiences that are traditionally at odds with workplace learning? How might the idea of the

'production' of knowledge through learning at work, offer a perspective on the formation of human capital?

- Questions about knowledge formation and learning at work. How might current approaches to workplace learning be reconceptualised to better take into account concepts of knowledge production? How can workplace learning be theorised in terms of the way knowledge is taken up and transformed through professional judgements and other processes at work? How do the demands of the contemporary workplace demand higher order cognition in this way?
- Questions about academic institutions and their knowledge codes. If it is true that work-based learning challenges those knowledge-codes that are historically the basis for framing the formal curriculum, what new knowledge-codes are required by the different conditions of learning in the workplace? To what extent are concepts such as productive learning useful to the task of designing educational practice around a 'curriculum of work'? What might be some of the educational implications of a rethinking of curriculum knowledge codes in the light of work-based learning? If work-based learning represents a 'weakening' of boundaries of work and education, to what extent will the strong divisions between higher and further education institutions be sustained in the future?
- Questions about contemporary knowledge formation. Much of the argument takes current theorisations of 'new modes' of knowledge production as a reference point. There are questions about the adequacy of this theory of contemporary knowledge formation, including how the supposed shift to knowledge-production in its contexts of application is to be understood. What might the debate about knowledge-production imply for the rethinking of educational institutions and the formal curriculum? How does this debate provide a broader context for arguments about workplace learning as situated knowledge-production?
- Questions about working identity. What do the changing parameters of work and learning imply for the management of identity in workplaces? How does work-based learning present limits and possibilities for defining working identity? How can working knowledge be understood as including the processes by which employees manage their identities as workers? What kinds of capacities or competencies must workers have developed to take advantage of opportunities in the 'humanised workplace' to be able to fashion work identities? To what extent are current theories of learning from experience useful in this task? How do power and authority relationships govern the processes involved? How in its nature is 'working identity' accomplished in specific workplaces and in terms of local and situated working knowledges?

The remainder of this paper presents some current thinking about researching workplace learning that is informed by this broad research agenda.

The problem of the 'embeddedness' of workplace learning

The difficulties of researching how knowledge is 'produced' in the workplace in relation to work-based learning are not to be under-estimated. One such difficulty is the 'embeddedness' of learning at work. If knowledge is being 'produced' through learning at work, how is this to be observed and understood if learning is part and parcel of the ordinary texture of work activity? How is research to uncover the learning that occurs associated with workplace activities? A major research project underway at UTS is focusing on this question. It asks:

- How do employees construct learning through their work relationships for their own benefit and for that of their work, thereby furthering the strategic goals of the organisation?
- What conceptions of learning do employees hold and how do these limit their opportunities and those of the organisation for learning?
- What formal interventions can be made in the organisation to maximise the identification and utilisation of learning opportunities without undermining the effectiveness of existing informal learning processes?

Obviously, it is difficult to answer such questions without some kind of social analysis of workplace learning—that is, an approach which seeks to understand the ways in which organisational culture and systems encourage or inhibit learning. Such an approach needs to take account of the complexities of the contemporary workplace. Learning is negotiated through work relationships and networks (Poell, van der Krogt & Wildermeersch 1999) and it is necessary to have theoretical perspectives that recognise this. It is essential to draw on theoretical resources from human resource development, workplace

learning and adult and experiential learning (eg Watkins & Marsick 1993, Argyris 1996, McIntyre 1996, Boud 1998, Denton 1998, Boud & Garrick 1999, Garrick 1999).

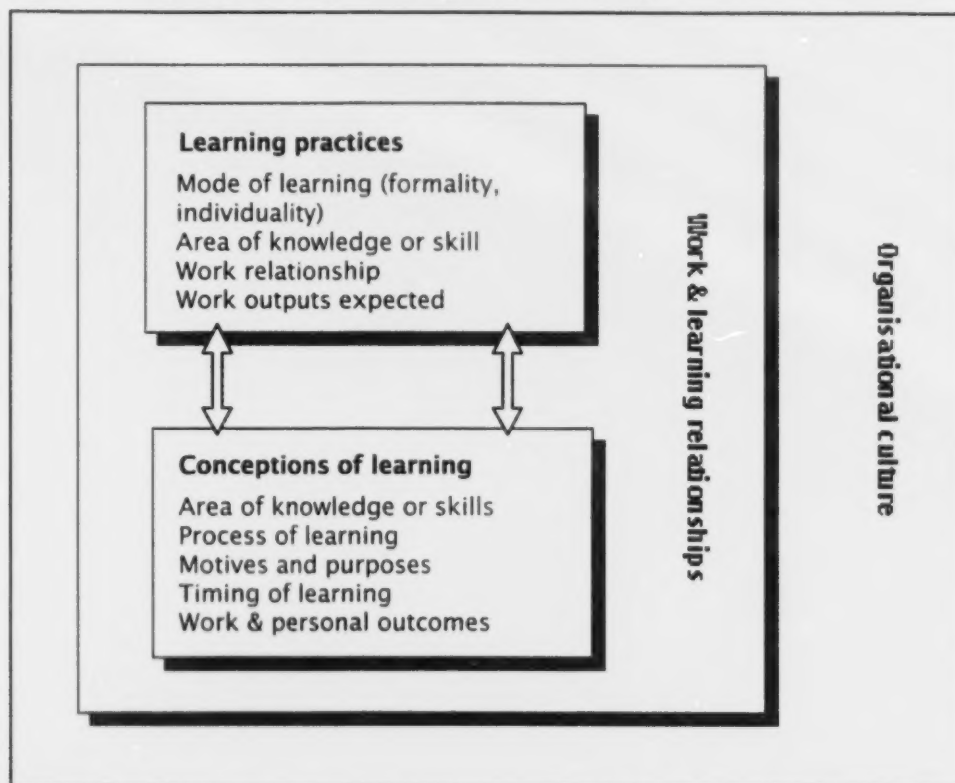
However, there is a relative poverty of theorisation of workplace learning. Though the term 'learning organisation' has been common in corporate discourse, its characteristics are not well understood. Related terms such as 'empowerment', drawn from radical pedagogy, are also used with uncritical ease of the changes in contemporary work (Gee et al 1996). Recent research offers both a critique and theorisation of the learning organisation in various ways. One set challenges the prevailing philosophical and organisational rationales for workplace learning (Garrick 1999); another set seeks to explain the relationship between organisational and individual learning as a relationship of power and subjectivity (du Gay 1996, Rose 1989, Miller & Rose 1990); yet another, the gap that exists between the rhetoric about 'learning organisations' and the realities of the workplace.

In short, it is far from clear how learning is organised in workplaces and how it is to be understood. Empirical investigation of the embedded nature of learning in workplaces is needed to understand the nature of learning organisations. There are many issues arising from what is learned in the contemporary workplace—questions about how human capital is generated or deployed, and how occupational knowledge relates to vocational qualifications. There are also questions regarding the organisational impacts of learning in the workplace, including the economic contribution that learning makes to productivity.

Such questions cannot be answered before research has been conducted into the embedded nature of learning in the workplace. Other research inquiring into these questions (eg Lave 1991, Watkins & Marsick 1993) has glossed over the matter of the organisation of learning and its identification, or focused, narrowly, for example, on the role of communication in such learning. To reiterate the point, it is necessary to take a social theoretical perspective in which work is understood as a 'community of practice' with many situated learning elements (Billet 1998, Lave 1991).

Thus learning has to be understood as organised and enacted through work relationships, rather than as a psychological process. This kind of understanding is linked to current thinking about the new 'learner worker' or 'knowledge worker', the 'self-regulating employee' who is encouraged to assume responsibility for their work and learning. A conceptual framework developing such an approach can be outlined (Figure 1):

Figure 1. Conceptual framework for analysing workplace learning



First, there is what employees *deem to be learning practices* and how they understand these practices by their various conceptions of learning. 'Learning practices' means what employees do to organise their activities with learning in mind, individually or collectively. The term 'conception of learning' refers to how employees understand their work-related learning, how learning is conducted in relation to individual and organisational goals and values. It refers to a set of 'understandings' which include beliefs about the nature of learning processes as they relate to tacit and everyday knowledge about what learning is possible and how it occurs.

Second, there are the *work relationships* and the social learning that occurs among employees and how this influences the formation and modification of learning practices on work sites. By highlighting work relationships, it is implied that learning practices have a 'negotiated' character. They are to be found in 'learning networks', as they are organised through relationships, including authority relationships with managers and supervisors. Obviously, learning is shaped by various kinds of responses, including that relating to the worth or priority of the learning practices themselves, or information about learning and its results.

Third, there is the *organisational culture* that provides a context for learning, influencing the work relationships that modify and mediate the learning that takes place. Questions then arise about what organisational factors—systems, or ways of organising and managing work—are linked to the shaping and negotiation of learning practices.

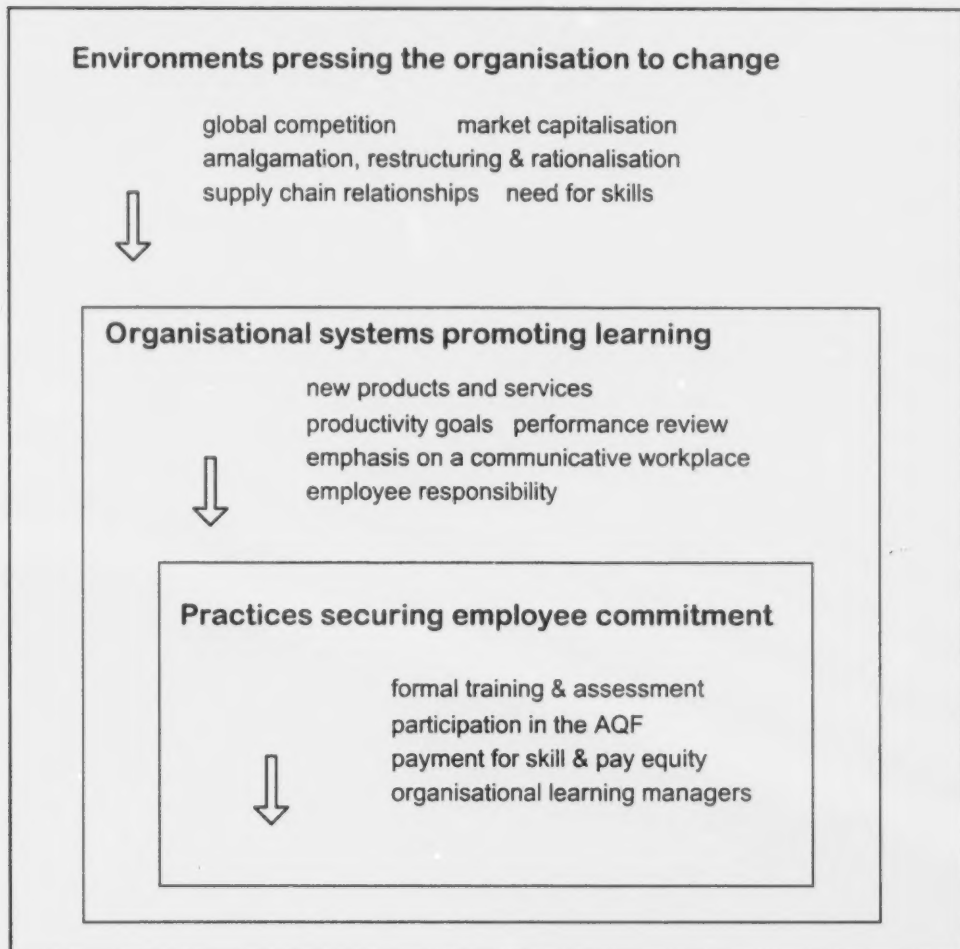
Analysing conditions for a learning culture

This framework may be extended by examining further how organisational culture acts upon the matrix of work relationships to condition learning. There is a need to see learning and a 'learning culture' as 'produced' in an organisation. While the educational position is often that learning is an unquestioned good, it cannot be thereby assumed that learning simply happens produced by an exhortation to employees to create a learning culture.

Drawing on current work being conducted by the UTS Research Centre for Vocational Education and Training, it is possible to suggest what conditions help to create a learning culture (Johnston et al 2000). This research has arrived at the view that a 'learning culture' and increased workplace learning is the result of

deliberate restructuring of organisational systems and changes to work relationships and work performance. The shift to a learning culture is conditioned by a shift to a culture of productivity and performance demanded by a highly competitive business environment (Figure 2):

Figure 2. Factors conditioning a learning culture (Johnston et al 2000)



In Johnston et al's model, the enterprise is seen as adapting to a change environment which presses it to develop organisational systems that will enable it to adapt, survive and prosper. There are a range of catalysts for organisational change that will tend to demand work-related learning by employees, including the wholesale restructuring of a company following market capitalisation, acquisition or expansion, amalgamation and rationalisation, or public sector reform.

The 'press' on the organisation is addressed by developing systems that deliberately promote learning by employees that will assist them to adapt to changed work demands. Often these systems will demand greater productivity and higher performance – the matrix for learning is the creation of a culture of productivity and performance, for example, through performance review and the shifting of responsibility and initiative to teams within a context that emphasises communication about work. Though it has become commonplace to assert that there is a great deal of informal learning going on as a result of organisational change, the point being made here is that systems are designed to promote learning as part of enhanced performance.

Thus, the model suggests that there is a further dimension where the organisational systems need to have features that will secure employee commitment to learning through particular work practices. Such practices, it might be said, institute learning for work and include the development of formal training or assessment systems, participation in the Australian Qualifications Framework through formal courses or other arrangements, the creation of pay-for-skill incentives through enterprise bargaining, and the creation of learning managers whose primary role is not to train, in the narrow sense, but to 'embed' learning in work practices and organisational systems (Johnston et al 2000).

This model represents the development of a learning culture in a certain way. It suggests that a 'learning culture' is something achieved through the deliberate arrangements designed to maximise productive work in a highly competitive environment, where the organisations systems have to be designed to support the development of employees if productivity goals are to be achieved. In short, this model does not idealise 'learning culture' as a mysterious ethos that comes about through exhortation of managers alone or the goodwill of employees persuaded that it is a 'good thing', but as a result of organisational change managed in this direction.

Conclusion

The research agenda arising from contemporary 'working knowledge' is broad indeed. If work-based learning is to be researched, it is necessary for researchers to go beyond their professional concern with educational issues and understand how learning in the workplace is embedded in workplace practices and relationships. Though theories of adult learning are a first resource for understanding workplace learning, they are not adequate in themselves as an account of the complexities of contemporary workplaces where 'learning' is being demanded of employees as part of their working conditions. It is essential to have a social analysis of skill and knowledge as it is configured by changing employment conditions and as it is embedded in work relationships.

Where work-based learning programs are negotiated with employers as part of managerial efforts to create a 'learning organisation' operating in a highly competitive business environment, sufficient attention has to be paid to the fact that workplace learning is being engineered, or 'structured in' to organisational systems designed to increase employee productivity and work performance. In this way, the broader meanings of work-based learning as it reflects a shift of vocational education and training out of institutions and into the workplace, driven by competitive pressures of a globalisation and the emerging 'knowledge economy', can be explored. Researchers interested in the link between the trend to work-based learning and the 'production' of knowledge at work have a task ahead of them.

Note: This paper draws extensively on material developed with colleagues David Boud, Nicky Solomon and Colin Symes for an Australian Research Council SPIRT grant.

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WORKING KNOWLEDGE IN MANAGEMENT AND MEDICINE: TALES OF TECHNOLOGY AND ONTOLOGY

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Introduction

It is commonly argued that current trends in the economy, most particularly the global economy, have exposed enterprises to increasing levels of competition and placed greater pressure on them to improve performance. Both business and government organisations are seeking improved performance by managing the resources of the organisation better – particularly their ‘human resources’ which have come to represent a source of sustainable competitive advantage. Knowledge and the management of knowledge are emerging as critical sites of contestation in contemporary organisations. ‘Today’s economy runs on knowledge, and most companies work assiduously to capitalize on that fact. They use cross-functional teams, customer- or product-focused business units, and work groups – to name just a few organizational forms – to capture and spread ideas and know-how’ (Wenger & Snyder 2000: 139). Common to these organisational and management practices is an emphasis on the role of information technology in providing the infrastructural means whereby knowledge can be captured and spread.

In this paper I explore issues to do with knowledge and the management of knowledge in the fields of management and medicine. More specifically, I discuss two ‘technologies of knowledge’ which have been introduced recently to private and public sector organisations: firstly, the Frontline Management Initiative, a national training and development strategy which is intended to support Australian enterprises to raise their performance by developing the competency of their frontline managers; and secondly, the Clinicians Health Channel, a computerised information system which is intended to assist doctors, nurses and allied health professionals in clinical decision-making by providing on-line access to sources of scientific knowledge.

The latter initiative is more obviously a *technology* inasmuch as it concerns knowledge which can be managed electronically. Both initiatives however, are exemplary technologies of knowledge or technologies of representation. As Cooper (1993: 282) explains, a technology of representation allows the manipulation of objects and events at a spatial and temporal distance. More importantly perhaps for the purposes of this paper, representational technologies know in advance of practice the knowledge that is required in practice:

Knowing in advance is a defining feature of technologies of representation and this in effect depends upon the technologies physically extending themselves in space and time. ... modern technologies of representation *know in advance* by simulating within themselves all the critical features of the external conditions they seek to control. Representation in this case is a matter of incorporation, and knowing in advance is really a form of temporal reversal ... Representation is simply a device for realizing *gain* (Cooper 1993: 284-5, emphasis in original).

Technologies of representation tend to equate knowledge with representations of knowledge (eg. competencies, research findings) and knowing with applying representations. They embed a ‘capture and disseminate’ view of knowledge – a view that sits comfortably with contemporary corporate management practices such as knowledge management. They anticipate what knowers may do and what/who they may be. In other words, they seek to produce changes in human behaviour *and* in human being. They present interesting epistemological and ontological issues for discussion. Before addressing these issues, I will provide a little more detail about each of these technologies.

‘New model management’: From cop to coach?

Management knowledge, it is currently claimed, is being transformed. Managers must now sponsor the creation of ‘collaborative cultures, group technologies, supportive infrastructures and sensitive measurement systems to facilitate the effective acquisition and deployment of new knowledge’ (Clarke & Clegg 1998: 431). The last decade has witnessed the growth of new concepts and practices in management and management development in organisations. Managers are increasingly encouraged to take more responsibility for *development*, both the development of individuals and the development of the organisation. Work is increasingly organised around projects and teams and organisational decisions are made in these teams. The ‘new model manager’ is taken to be more a *coach* than a *cop*: able to implement management

practices which build teams, provide leadership, 'empower' workers and harness their knowledge and creativity.

The frontline management initiative (FMI)

The Frontline Management Initiative (FMI) originated as an initiative of *Enterprising Nation* – that is, the Karpin Report (Karpin 1995). This report identified an urgent need to upgrade the leadership skills of Australian frontline management. The FMI is a competence-based management development strategy which places learning within an organisation and links management performance to the achievement of business outcomes. In order to achieve competency and relate it to business goals, competency standards have been developed. These standards are generic, that is, they do not relate to any specific job functions, rather they relate to a set of skills. They are set prior to the practice of management development and 'carried' to this practice via a Management Development Kit. The eleven management competencies and their contents are as follows:

		UNIT	ELEMENT
LEADING BY EXAMPLE	Unit 1	Manage personal work priorities and professional development	1.1 Manage self 1.2 Set and meet work priorities 1.3 Develop and maintain professional competence
	Unit 2	Provide leadership in the workplace	2.1 Model high standards of management performance 2.2 Enhance the enterprise's image 2.3 Influence individuals and teams positively 2.4 Make informed decisions
LEADING, COACHING, FACILITATING AND EMPOWERING OTHERS	Unit 3	Establish and manage effective workplace relationships	3.1 Gather, convey and receive information and ideas 3.2 Develop trust and confidence 3.3 ... 4.1 Participate in team planning 4.2 Develop team commitment and co-operation 4.3 ...
	UNIT 4	Participate in, lead and facilitate work teams	
CREATING BEST PRACTICE	Unit 5	Manage operations to achieve planned outcomes	5.1 Plan resource use to achieve profit/productivity targets 5.2 ...
	UNIT 6	Manage workplace information	6.1 Identify and source information needs 6.2 ...
	Unit 7	Manage quality customer service	7.1 Plan to meet internal and external customer requirements 7.2 ...
	Unit 8	Develop and maintain a safe workplace and environment	8.1 Access and share legislation, codes and standards 8.2 ...
	Unit 9	Implement and monitor continuous improvement systems and processes	9.1 Implement continuous improvement systems and processes 9.2 ...
CREATING AN INNOVATIVE CULTURE	UNIT 10	Facilitate and capitalise on change and innovation	10.1 Participate in planning the introduction of change 10.2 ...
	Unit 11	Contribute to the development of a workplace learning environment	11.1 Create learning opportunities 11.2 ...

FIGURE 1: Frontline Management Competencies (ANTA 1998: 6)

As stated in the introduction to *Frontline Management Competencies*, one of the booklets which forms part of the Frontline Management Development Kit, frontline management competencies 'describe what is expected of high performing frontline managers' (ANTA 1998: 1). The critical words here are 'high performing'. The FMI seeks to shape the subjectivity of frontline managers, to make these managers in a particular mould. Frontline managers are discursively constructed as leaders, coaches, creators of best practice and so on. Each of these subject positions signals that this management development strategy sits squarely within the 'new model management' where the emphasis is on so-called flat organisational structures, continuous improvement, quality customer service, teamwork and the like.

Competencies are conceived as (more or less) accurate representations of a real world of management knowledge and skill. Caught up in an empiricist epistemology and a realist ontology, they are not taken to construct this world. In other words, they are not conceived to influence the form and substance of the knowledge and skills that are 'needed' by Australian managers. Little attention is given the idea that the knowledge and skills that these competencies purport to represent are represented in a particular way. Competencies are abstract knowledge representations or formal knowledge representations. One kind of knowledge, that is, 'encoded knowledge' – 'information conveyed by signs and symbols' (Blackler 1995: 1025) – comes to count as *the* knowledge. Other kinds of knowledge, for example, 'embodied knowledge' and 'encultured knowledge' (ibid, 1024), are displaced.

'New model medicine': From stethoscope to microprocessor?

Medical knowledge, it is currently claimed, is being transformed. Among other things, competitive market forces, consumer empowerment, evidence-based medicine and information technology are producing a 'changing paradigm of knowledge' (Bauer 2000: 175). My concern in this paper is with the latter developments each of which provides a systematic methodology towards reshaping medical practice, here, clinical decision-making, which traditionally has relied on the authority of individual clinicians – the proficiency and judgment that clinicians acquire through clinical experience and clinical practice (Sackett et al. 1996: 71). Thus, evidence-based medicine (EBM) 'begins from a recognition that much current clinical practice is not grounded in firm evidence or a body of scientific knowledge, or is not so grounded to the extent that it could and should be' (Hargreaves 2000: 227). What counts as firm evidence in EBM is findings from clinically relevant research. Tools such as databases and registers available on the Internet are used to source these findings and assist with 'getting evidence into practice' (NHS 1999).

The Clinicians Health Channel (CHC)

The Clinicians Health Channel is a knowledge management initiative of the Victorian Department of Human Services' Information, Information Technology and Telecommunications Strategy. Providing on-line access to various sources of information to assist clinicians in decision making, the Channel takes the form of a web-site:

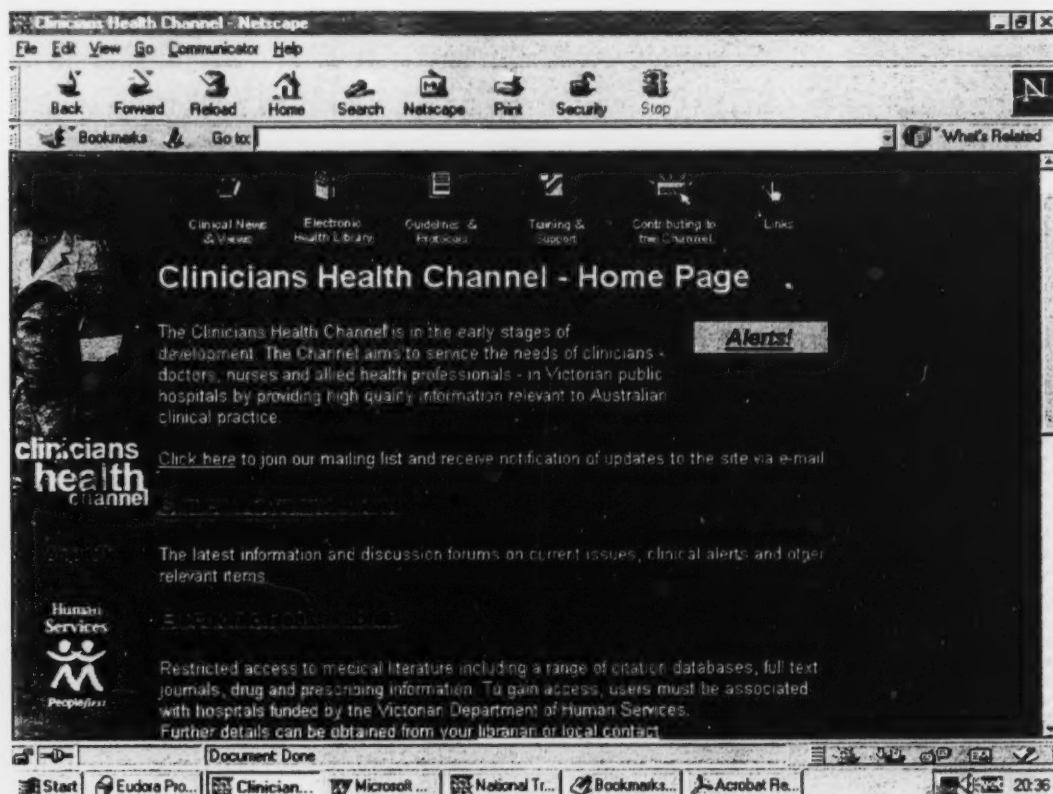


FIGURE 2: Clinicians Health Channel

The design and development of the CHC is based on the assumption that clinicians have an information 'need', or, better perhaps, are information users. The status of 'user' is assumed as a given. Clinicians are 'configured' as two kinds of user (Woolgar 1991): (i) users of information and (ii) users of information that can be collected and compiled in computer databases and registers (users of information technology). They are also configured as 'integrators': 'The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research' (Sackett 1996: 71).

Evidence-based medicine is not uncontroversial: it is the subject of intense debates that centre on the questions of *what clinical practitioners need to know* in order to make sound clinical decisions and *what clinical practice is*, or better perhaps, could and should be. Medical practice may be evolving to the point where one day it is based more on the microprocessor than the stethoscope. Using infrastructure like information technology as a support, EBM purports to know in advance of practice the knowledge that is required in practice: in this knowing, it is an exemplary technology of knowledge or technology of representation. The knowledge that is required is evidentiary knowledge where evidence is defined as findings from clinically relevant research. Evidentiary knowledge can be transmitted, disseminated, reproduced and recorded – in other words, codified or encoded.

Certain possibilities for knowledge are opened up and other possibilities presumably closed off: '[T]he literature of EBM is centred on the notion of the general priority of knowledge obtained by clinical research over other forms of knowledge. By acknowledging this general priority of knowledge derived from clinical research, EBM differentiates itself from possible alternatives, such as "experientially-based," "emotionally-based," "physiologically-based," "opinion-based," or "value-based" medicine' (Tonelli 1998: 1235). As conceived in principle, EBM gives general priority to evidentiary knowledge. As performed in practice, EBM may produce other conceptions of evidence – other evidence – and other conceptions of knowledge – other knowledges. It remains to empirical research to determine what EBM does and does not do and is or is not.

Working knowledge: An ontological perspective

[K]nowing is as much about making, about ontology, as it ever was about epistemology (Law 2000b: 28).

In the sections above, I briefly described the dynamics of two technologies of knowledge where knowledge is defined as something that is required in practice and can seemingly be stated in advance of it. Thus, the competencies of competence-based management and the evidence of evidence-based medicine are constituted prior to and outside of practice. They carry a view of knowledge as something that individuals and organisations *have* (or should have), rather than something that they *do*. A 'representational' view of knowledge (Pickering 1995) informs the FMI and the CHC. This view asserts that knowledge is the accurate representation of some prior reality and is universal. In this view, knowing is equated with applying or integrating representations (applying competencies, integrating research findings). Counter to this view, a 'performative' view of knowledge (ibid) asserts that all knowledge derives from particular practical contexts and is an enactment. '[T]he making of new knowledge is a highly local affair. ... [T]rue knowledge embeds a local balance which is achieved in negotiation over particular issues at particular places' (Verran 1995: 103). A performative perspective on knowledge presupposes a focus on 'knowing' rather than 'knowledge'. There are various advantages of this focus, not the least of which is that 'the distinction that is conventionally assumed between knowledge and learning is avoided' (Blackler 1995: 1038).

In what follows I trace contesting versions of knowledge and knowing using interview data collected in the course of investigating the FMI. My interest is in ontological questions (which, as argued above, are also epistemological questions). In the style of Latour's (1999) philosophy of 'circulating reference', I attempt to explore the ontology of management competencies, their movement from one ontological status to another. Thus, I start with Paul, a candidate for the Certificate in Frontline Management, who tells of his training experience in this way:

Well after going to the actual FMI training session, the two day, three day course, whichever one it was, I'd return from that with my lovely little folder and inside of that is a list of tick-it boxes to say: "I can do this, I have evidence of this, I know this", which I'll work through, and he'll (coach) work through, and in 90% of cases I'll say, "Yes, I can and I have and I know" and he'll say, "No you don't, no you don't, no you don't" and from that we'll sit down and he'll (say) "OK. Work out. These are the areas you need to work on", for him to be happy to tick that box to say that I know this or I have this or Some areas obviously, he knows as well as I do that it's not a problem, it's straight tick the box out, other areas need further development. Usually his development is further than what I think it should be but um no problems there working to satisfy what he wants, what his requirements are, because if I don't do that he's not going to tick the box and I won't get assessed (Interview, April 17th 2000).

Paul talks initially of the FMI in terms of his 'lovely little folder', inside of which 'is a list of tick-it boxes. Competencies are *discursive* or *linguistic items*: they stand in or speak for what Paul 'can do ... have ... (and) know'. They are also *administrative instruments* which allow for 'tick(ing) the box' and 'get(ting) assessed'. Their technical properties (efficiency, objectivity, calculability) make them ideal for management development of a technical-functional kind, that is, development that is directed to the efficient achievement of pre-determined goals.

As Paul proceeds with his account, both the form that competencies take and the meaning of competency and competency development appear to change. Management competence becomes contestable – a matter of interpretation and judgement. Graham, the coach, plays a leading, mediational role: 'Usually his development is further than what I think it should be'. Paul appears concerned to meet the written requirements (competencies) and Graham's requirements. The content of competencies appears to change. Competencies are now areas that *Graham* deems 'need further development': they are not necessarily the areas encoded in the Frontline Management Development Kit. Competence development is now largely a *social interactional process*. The extent of the shift is suggested in the following where Paul describes the coach-candidate relationship:

Even once we've developed the IDP (Individual Development Plan), we sit down and go through it. We'll discuss it. The first IDP we probably sat down and went through it, maybe eight times before I finally got assessed. Whereas the most recent one, I think I've only sat down with him twice because we worked out how to work together on it ... But we will discuss it. If I think he's pushing too far, (expecting) too much from me in a particular area, I'll certainly let him know that. You'll find there's evidence in the IDPs that that's been adjusted slightly. Or, he'll explain his belief why he wants me to go that extra step further and usually I'm happy enough to do so and do it (Interview, April 17th 2000).

Competencies are no longer stand-alone, technical guides to either developing or assessing. They are constituted in social relations and activities: 'The first IDP we probably sat down and went through it, maybe eight times before I finally got assessed. Whereas the most recent one, I think I've only sat down with him twice because we worked out how to work together on it'. They shift from one ontological status to another – realist to constructivist – much like Paul and Graham do – technician to mediator/moderator. Needless to say this shift is also an epistemological one: generalisable knowledge to situated knowledge, codified knowledge to tacit knowledge. The representations of the world of management development and the reality of this development come into being together. 'Knowledges and the objects that they know may be understood as being produced together (Law 2000a: 349).

Knowing as (dis)placing: Working disparate knowledges together

The interview data would suggest that the contours of working knowledge are never decisively known in advance of practice. A reflexive relationship develops between knowledge representations (competencies, means) and knowledge practices (competent management, ends). Knowledge and meaning do not reside in a single site such as a Kit but in the *space of relationships* between the Kit and its users (and their discourse communities and practices). Drawing on actor-network sources (see, in particular, Law 2000a, 1992; Law & Hassard 1999; Latour 1999), knowing is an enactment that takes place in particular locations but 'is not tied to any particular location: in the head, on a spreadsheet, in the skills of bricklayers, in a text, within a machine, on the tip of the tongue, across an organization, *knowing is a relational moment or an effect, not a substance*' (Law 2000a: 350, my emphasis).

There are various advantages of conceptualising working knowledge in relational terms, not the least of which is that this conceptualisation promotes the view that knowing comes in many forms (Law 2000a). Viewing knowing as a multiplicity (working knowledges) supports a condition of decentredness where no fixed, essential knowing – in other words, no master narrative of knowledge – can be produced. Knowledge and learning are achieved through negotiation, as evidenced in the interview data where management competence develops relationally with coach, candidate and competencies assuming different identities and roles. The spatial metaphor of knowing as (dis)placing is a useful guide to thinking working knowledge in a relational way (see Law 2000a for discussion of a somewhat similar concept). The notion of knowing as (dis)placing conveys the idea that placing and displacing are simultaneous practices always found together. As the parentheses strive to show, displacing is the subservient term. Here, I am drawing on Derrida's (1976) discussion of supplementarity. For Derrida, a supplement is something that both completes *and* replaces what is constructed as foundational. It is that which is made marginal to a controlling centre. The marginal or inessential as supplement however, is actually the necessary and essential. Thus, emphasising fixity through 'finished' solutions like competencies and Kits serves to conceal the endless decision-making and negotiation that commonly takes place in generating and enacting these solutions. This decision making and negotiation is displaced. As supplement however, it is necessary to the use of what is constructed as foundational – competencies and Kits.

No seamless story of high performance management based on pre-set competency standards (the eleven frontline management competencies) emerges from the data on the Frontline Management Initiative. No universally appropriate model of the new manager or new manager developer appears. Contextuality – placing which is at the same time displacing – is crucial to developing management competence: '... in 90% of cases I'll say, "Yes, I can and I have and I know" and he'll say, "No you don't, no you don't, no you don't"'. Good management (and good knowledge management) supports a condition of decentredness where multiple and different forms of knowing are valued and in play. Robust knowledge is produced when multiple and different locations are mobilised such that they contest or support, or contest and support, each other. The interview material reveals that working knowledge is a complex outcome or, better perhaps, event. It involves a number of processes – explicit and tacit, formal and informal, social and technical – which are only partially assimilable. Rather than regarding it as something workplaces *have* (or something they can have), it might be better to regard it as something that they *do*, and provide means to assist managers and workers to analyse the dynamics of the processes through which it is 'done'.

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WORKPLACE LEARNING FROM A CURRICULUM PERSPECTIVE

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Introduction

This paper continues the development of a research program on co-operative (co-op) and career education across Canada (Munby, Hutchinson, & Chin, 2000a). Co-op education is a part of the secondary-school curriculum which is named for the co-operation between schools and employers. In Canada, co-op education involves students spending part of the school day in a workplace setting for as long as a semester while enrolled in full-time study. Typically, students also engage in classroom orientations to the workplace and in reflective seminars. Although co-op education credits are taken by approximately 10% of Canada's secondary-school students each year (Munby, Cunningham, & Chin, 1998), this portion of the curriculum has received scant attention in the research literature. Our recent papers have reported on the equity of access across Canada (Hutchinson et al., 1999) and have developed a research agenda for studying workplace learning from a curriculum perspective (Munby, Hutchinson, & Chin, 2000b). Few studies on informal and workplace learning pay heed to the relationships between learning, knowledge, and experience, and fewer study these relationships in the context of co-op education.

The paper reports on a set of case studies of co-op placements in a veterinary clinic, selected because of its science focus, from the perspective that workplace experiences are essentially curricular. It opens with a presentation of the background literature and a description of the theoretical framework that informs the research we have conducted at the veterinary clinic. This is followed by a description of the setting and our data collection approaches. Data analysis reveals several significant ways in which teaching and learning in the workplace are strikingly different from teaching and learning in customary classroom settings. Data analysis also reveals a variety of ways in which learning in the workplace occurred. Taken together, the findings create an image of a "natural curriculum" in the workplace.

Literature and theoretical framework

Although co-operative education credits are taken by a large number of secondary-school students each year, there is little research on this portion of the curriculum. Despite the support for informal learning, there is little understanding of the process of learning from experience. For example, a systematic literature search conducted last year identified just one piece: the sociological study by Simon, Dipbo, and Shenke (1991), which was directed at workplace socialization. Berryman (1993) found that although studies on informal learning are "critical to the current enthusiasm for work-based apprenticeships, [they] are so few as to preclude a review of any length" (p. 345).

There has been research on workplace learning (e.g., Marsick, 1987; Watkins & Marsick, 1992), but this has been driven by a focus on the organization, its structure and function. We found this approach seemed less suitable to learning in co-op education settings for several reasons. First, the research was directed at adults rather than at adolescents. Second, the approach was concerned with the workplace alone, whereas co-op education involves the students in in-school instruction also, so roles and responsibilities are different. Third, their research specifically distinguishes workplace learning from education, while co-op education clearly has a role to play in educating adolescents about the world of work.

The theoretical framework for our research needed to satisfy a number of criteria, many of which are closely related to the educative potential of co-op education in the secondary-school system. That is, the theoretical approach needed to embrace a consideration of the workplace experiences as curriculum, so the importance of the experience, of the planning, and of the instruction provided by those at the workplace would be visible in the framework. Equally, the framework needed to recognize the special character of experiential knowledge, and needed to provide a cognitive perspective on learning in experience that allowed us to identify features of the workplace that promoted learning which could then be incorporated into instruction to enhance workplace learning.

Lave's (1988) text on situated cognition, Lave and Wenger's (1991) work on situated learning and legitimate peripheral participation, and Wenger's (1998) work on communities of practice, recognized the cognitive domain in our data analysis. Schön's (1983) argument that knowing-in-action is a legitimate form of knowledge, and the derivative view that experience itself has an authority (Munby & Russell, 1994), acknowledged the place of experiential knowledge in our research. The overarching theoretical framework

of examining workplace learning as curriculum came in the form of Schwab's commonplaces of curriculum (Schwab, 1972). As such, the data collected from the veterinary hospital were approached initially by considering the teacher, the student, the subject matter, and the context (i.e., the four commonplaces of curriculum). From a curriculum perspective, with its emphasis on knowledge, learning, and experience, our attention in data analysis was focused on *what* the students were learning in these workplace settings, *how* they were learning, and how the workplace staff assessed the co-op students' learning.

The clinic setting and the data

We conducted our research as case studies of four co-op students in their placement, a "small animal" hospital (the veterinary clinic) that has operated in its current location for approximately a decade. The building contains a spacious reception area, the veterinarian's office, space for dog grooming, four small examination rooms, six dog runs, an isolation ward, a laboratory, an x-ray room, a preparatory room, a surgery, and a surgical ward. Most of the data gathering occurred in the preparatory room and the surgery with the remaining observations and data gathering occurring in the surgical ward or laboratory. Since the examination rooms are very small, we did not attempt to observe at these locations.

The veterinarian, Bill, founded this clinic and has practised there ever since. He specializes in the care of house pets, mainly geriatric dogs and cats. He has arranged his practice so that the scheduled clinic appointments and the scheduled surgeries take place in the morning. The afternoons are left for walk-in traffic. We collected data during the mornings to coincide with co-op student placements and increased clinic activity. The clinic personnel were the veterinarian (Bill), two veterinary technicians (Kelly and Jill), and an animal-care aide (Sue). Four co-op students participated in the two placements that comprise this study; each placement included two co-op students. Kate and Ruth participated in the first placement while Ann and Jane participated in the second placement. All four students were participating in the co-op placement as part of a high school biology credit. (We use fictitious names in all of our research.) Our studies involved regular ethnographic observations at the clinic (about 60 hours), and interviews with the co-op students, with the veterinarian, and with the clinic staff. A more extensive description of the participants and the data collection methods can be found in Chin, Young, and Munby (1998), and Munby, Cunningham, and Chin (1998).

Analysis

The data were subjected to techniques of pattern and thematic analyses typical of qualitative research (McMillan & Schumacher, 1997). Members of the research team worked on the data separately and together to ensure that the construct development was reliable. Customary approaches, like constant comparison, were used to check for validity, and the emerging themes were checked against the content of interviews with students and the clinic staff. With our focus on what the students were learning, how the students were learning it, and how the clinic staff assessed that learning, data analysis revealed several significant findings about how workplace learning differs from school learning, and about the variety of ways in which the students were learning in the workplace.

We chose to use Schwab's commonplaces of curriculum (Schwab, 1972) as a framework to guide our data analysis. As such, the data collected from the veterinary clinic were approached initially by considering the teacher, the student, the subject matter, and the context. Generally, we would have little difficulty identifying the commonplaces within typical classrooms, but as our work in the veterinary clinic proceeded, we found that our attention to the commonplaces revealed several significant differences between workplace learning and school learning. This paper highlights differences found in the purposes of the institution, the organization of subject matter, the role of knowledge and skills, the nature of assessment, and the variety of ways of learning.

The purposes of the institution

Only after we had observed in the veterinary clinic did we understand the impact of differences in institutional goals on student learning. Classrooms are devoted to student learning, but veterinary clinics are devoted to patient health and recovery, and to attracting customers willing to pay for the service. We might not expect learning opportunities to be interrupted in classrooms, but we came to expect this in the clinic especially if a patient was at risk. Also, the majority of standard procedures (spays, neuters, etc.) were conducted in silence, with the focus on the patient. Explicit instruction might be provided by one of the assistants before or after the procedure and when the patient's condition was stable. Activities directed at patient health and recovery are the routines of the hospital, and the effective participation of all concerned within these routines is paramount.

The tasks that the co-op students were expected to learn included some very simple tasks that were built into their daily routines. On the first day of the placement, the students were told about the job list that they were to begin as soon as they arrived at the clinic each day. This included feeding animals in the kennels, cleaning cages, filling water bowls, and walking the dogs. This daily chore is part of the clinic's commitment to the health and well-being of patients, and it seems to be recognized as such by the students. The students were given these responsibilities early on, and they were expected to complete them without overt supervision. Assuming such responsibilities had two effects. The co-op students immediately felt they were contributing clinic team members, and the co-op students were motivated to complete these tasks proficiently so that they would be ready to observe and eventually participate in the more interesting aspects of a clinic—namely, the treatment of animals—when the daily surgical routine began.

The organization of subject matter

Unlike a school setting, where learning in a course occurs each day during the term in manageable "conceptual chunks," students at the clinic experienced intensive learning during the first few weeks. Initially, we were unclear if the co-op students were expected to learn all of the information presented (especially without the benefit of note-taking). Field observations, however, revealed that complete retention of the information was not an immediate expectation. Rather, the information became meaningful when the researcher and co-op students came to see that knowledge was all part of the clinic's routines.

Expected tasks were introduced early on, and were reinforced through repetition. In the example of learning the task of preparing spay packs, the co-op students were introduced to the required cleaning techniques for surgical equipment and the need for maintaining sterile fields. Within the learning associated with preparing a spay pack, a series of gradual steps is implicitly used. These include: (a) showing the students the location of the soap and instructing them on which brushes to use (and which ones not to use), (b) showing the students how to remove scalpel blades during the cleaning technique, (c) instructing the students on which surgical tools (including the names and functions of these tools) go into a spay pack, and which ones are put in a "cold" sterile pan, (d) instructing the students how to clean and fold surgical gowns, and (e) showing the students how to properly fold the sterile pack and prepare it for autoclaving. The co-op students were not allowed to perform the autoclaving themselves because the clinic's autoclave was somewhat old and had to be operated in "just the right way" to prevent the spay pack from catching fire.

During the study with the second pair of co-op students, we again observed the introduction of the routines associated with the spay pack in the first days of the placement. Direct instructions included:

Using cold water it [blood, tissue remains] comes off the drape easier.
(Sue, September 16)

Then you have the cutting instrument that removes the claws. Do you have the instrument that holds the claws so they can be removed? That's your Rongeurs. If you think you are missing something from a pack like this, go through and remember how the [procedure] is done. (Sue, September 18)

Over the next few weeks, the co-op students supported each other by giving verbal quizzes about the names and functions of the various surgical tools. They also worked together to practise the preparation of spay packs. In this instance, the co-op students used some of their time in the clinic to reinforce and repeat the learning sequence associated with the routine. Such activities also occurred in their learning of routines surrounding the use and monitoring of the anesthetic machine. The subject matter of the workplace is organized around the authentic routines of the workplace.

The role of knowledge and skills

The example above shows that there is a gradation of tasks and responsibilities in the workplace. None of these tasks is insignificant even though cleaning out the runs might initially appear that way. Participation in this task provides students with a clear role within the functioning team, and is a precursor to assuming greater responsibilities. Legitimate peripheral participation is accompanied by learning and by a gradation in responsibility. Not surprisingly, increases in tasks and responsibilities bring the co-op students into closer proximity to the central goal of patient health.

Learning the skill of assembling a spay pack occurred very early in the co-op placement, and it was not until weeks later that the students learned the names and functions of the instruments in a spay pack. This clearly shows that, in the workplace, knowing how to perform the skill comes before knowing about the scientific facts and explanations behind it. This is in stark contrast to the sequence of classroom learning where the knowledge that can be tested on paper is learned first and seems more important than skill development. Kelly's explanation of how she introduced students to the anesthetic machine illustrates how learning to correctly watch an animal breathe preceded learning about the science behind the anesthetic machine.

First you show the [co-op student] just the basics of how to watch an animal breathing. And if they seem to be able to figure that out really easily, then you explain the ins and outs of the machine, and what exactly is going on, and why you're watching this. Some people don't really seem to want to know the underlying reasons for things, and other people do. So...every individual's a bit different. (Kelly, March 26)

Declarative knowledge was learned to serve procedural knowledge rather than for its own sake, which is how it is learned in school.

The nature of assessment

At first glance, there is little evidence of co-op student assessment—especially since there is apparently no note-taking and no formal testing. Gradually through our study of the veterinary clinic we learned that assessment plays an important and constant role. More importantly, the outcomes of informal assessment also serve to guide the clinic staff about when to increase the co-op students' responsibilities for various tasks, as well as when to adjust the breadth, depth, and frequency of exposing the co-op students to associated activities.

Most significantly, assessment is constantly monitored within three different domains. In parallel with typical school curricula, assessment in the workplace constantly monitors the co-op students' knowledge, skills, and attitudes (although in practice, schools often focus entirely on knowledge). Failure to achieve along these domains is the dominant limiting factor as to whether the co-op student is afforded increased opportunities for learning. Unlike the classroom, where the teacher presents new material each week, regardless of whether or not the students are achieving, the introduction of new learning opportunities ceases when a co-op student has not met the desired goals of the staff, or fails to show initiative.

The co-op students are constantly assessed on the knowledge they have learned within the workplace, and such assessments can occur at any time after an initial exposure to new information. For example, on the first day at the clinic, Kelly calls Ann and Jane over to watch her do a urinalysis. Kelly explains what she is doing and introduces the students to the refractometer and how to take readings from it. She does the same with the dipstick test for glucose.

Now we have the dipstick...each spot is colour coded and reacts with urine. So the first line is leukocytes so there are some white blood cells in there. Notice the colour on that bottle? It means that it is halfway between the colours...the pH is...there, it is 7.5...and the next means there is lots of sugar in the urine.

(Kelly, September 16)

It is noteworthy that during our next visit to the clinic, Kelly was again engaged in a urinalysis, and she used this opportunity both to reinforce the learning from the previous day, and to assess if Ann and Jane had understood. Regardless of whether the co-op students were being exposed to expected tasks or associated activities, in both instances repetition was an important feature. Repetition of the event in the workplace is the mode of learning that replaces the role of note-taking in the regular classroom. The following examples illustrate this phenomenon:

Kelly asks Ann, "What's this called?"

"Refractometer," Ann replies.

"If it's really low do you remember what I said it would mean about the kidneys?" Kelly asks.

Jane ventures, "That it's..."

Ann interjects, "There is lots of water."

Kelly replies, "Yeah...it means that they are not concentrating their urine."

(September 18)

Thus the repetitive nature of the experiences not only serves to reinforce the learning, but also presents an opportunity to concomitantly assess the co-op students. The most overt way of assessing the knowledge of the workplace occurs through direct questioning.

The co-op students are also constantly assessed on their skills and through direct observation, the staff members are able to decide if the co-op students are adequately performing these complex tasks. Such assessments determine if the co-op student is entitled to move along to the addition of more steps within the learning of these complex tasks. Unlike classroom settings, the workplace also assessed the attitude or "eagerness" with which they take initiative, ask for more responsibilities, ask questions, and so on. The following interview excerpts illustrate that a co-op student's perceived keenness is an important determinant of the extent to which the clinic staff devote time to that co-op student's learning during the placement:

...they learned and did things faster, and they got to do more than usual. But that's because there were two of them and they were very good workers.

(Kelly, June 12)

I assess the kids and try to determine how much they are capable of understanding. A lot of it too depends on the kid, and these two just tend to be there and do what they are told. They don't go that extra foot or extra mile or whatever, [nor] ask questions and show whether they are interested.

(Bill, April 11)

At the clinic, a co-op student is required to learn and demonstrate the mastery of the knowledge, skills, and attitudes that are deemed relevant to that particular workplace. The assessment of the co-op student's workplace performance by the supervising staff member directly influences the co-op student's access to new responsibilities and opportunities for learning. In this setting, greater opportunities for learning and increasing responsibilities for co-op students are dependent on positive workplace performance assessments by the clinic personnel.

The variety of ways of learning

As data analysis began, we initially focused on what the co-op students had learned, the evidence that such learning had occurred, and how they came to learn it. We quickly realized that how the co-op students came to learn in the veterinary clinic was quite complex, but could be characterized within two domains. First, explicit instruction or intervention by clinic staff was an obvious way in which the co-op students learned, but we realized that the activities of clinic staff took many different forms. Clinic staff communicated workplace knowledge through directed questioning, direct instruction, direction with reason, demonstration, and think-alouds. All categories are fairly self-explanatory, and examples have been presented earlier in the paper. An example of a demonstration is helpful in illustrating how such actions can communicate skills and reasons:

Sue demonstrated the correct way to fold a surgical gown so that it is ready for immediate use after autoclaving. In this case, in addition to folding the gown correctly, she went on to demonstrate why this is the correct way to fold the gown. She achieved this by pretending to be the surgeon and demonstrated how a surgeon would then put on the surgical gown without violating the aseptic field.

(September 16).

Second, and of particular interest, was how experience seemed to function in the workplace: it did not appear to be simply subject matter or the "content to be learned," although in many cases it was. But experience appeared to have an expanded role in the veterinary clinic: it seemed to function much as a teacher might. Clearly, *experience itself* can act as the "teacher" in the co-op students' learning through skill learning, through cues embedded within the routine itself, and through incongruities in routines that catalyze reflection. What follows, are examples where the experience itself was the teacher.

An example of skill learning is the act of restraining an animal. During one visit, Ann is asked if she has been taught how to hold the animals. She explains,

I know some of them. I can hold cats and dogs for vaccinations, and cats for pills and needles. But I haven't done all of them, although I've been shown them. Then I haven't asked to do it, like to anesthetize a cat how do you hold him. I know how to do it, I've never done it in practice. (Pause) I was practising on that cat actually. Jill grabbed him and said, "Oh, I'll show you how to hold the cat." So I was playing with him on the table. (September 19)

As Ann clearly understands, the experience itself plays a crucial role in being taught the specific skill. As Schön (1993) has suggested, the knowledge itself lies within the action, as in a dialogical relationship between the actor and the action.

An example of where the cues are embedded in the routine itself is illustrated through a depiction of a typical surgical procedure. The procedure starts when the veterinarian examines the charts and decides which animal is the next to undergo surgery. At that point, the animal is carried to the table in the preparatory room. The sequence is invariable: the weight is checked so that the correct amount of (valium/ketamine) induction anesthetic is used. The animal is held securely with comfort, and a portion of a leg is shaved, the shaved area is swabbed with disinfectant, the vein is rolled and the injection is given. Masking or tubing follows, and the area for surgery is shaved and swabbed. Once the animal is taken into the surgery, the table in the preparatory room is vacuumed and disinfected.

As we observed students watching and then participating in this routine, we came to see that their learning of the routine was embedded within the routine itself. Each component of the routine cues the students to the next component. Once in the routine, the components follow one another in a logical order. Numerous examples from the data illustrate how each co-op student carries out the same duties in the same order during each preparation of an animal for surgery.

Finally, an example of incongruous phenomena that lead to learning is contained within the following vignette recorded in our field notes.

During the observation conducted on April 10, Kate described how she learned why shredded newspaper is sometimes used as litter in the cages of the surgical ward. Usually, when she cleaned out the cages each morning, there were no more than two cages to clean, and she observed that sometimes the litter in the cages was clay and other times it was newspaper. However, the difference never seemed significant to her and she simply assumed that newspaper was used when the supply of clay was exhausted. On April 9, Kate saw that one cage had newspaper and another had clay. This was the first time that both litters had been used. This incongruity prompted her to ask for the reason: After declaws, cats are placed on newspaper because the clay litter can irritate the wounded paws. Strangely, although Kate had watched declaws, she always left for school at 11:00 and that was before any declaw was completed and the patient returned to a cage in the surgical ward. Although her schedule had interfered with learning, Kate spotted what was incongruous to her and this gave her an alternative route to the learning.

Unlike the classroom where the teacher plays an explicit role in assisting the students in learning certain subject matter, and then assessing how well the students have learned, the workplace is much more complex for two reasons. First, the activities of the workplace focus on the primary objectives of the veterinary clinic, and not on the co-op students' placement experiences. This creates difficulties in trying to determine what is being taught, how it is being taught, and how it is being assessed because such aspects are often latent. Second, "learning in workplace" suggests that there is also "teaching in workplace." As discussed in the preceding section of the paper, we found that the co-op students learned in many different ways, and from many different kinds of teachers.

Conclusion

The overall purpose of our research program is to improve the co-op experience and students' access to it. This paper shows that, by conceptualizing workplace learning as curriculum, we can identify aspects of the experience that can be made more explicit for learners. Specifically, our description of such features as the varied role of experience, the character of routines, and different forms of knowledge can assist workplace supervisors in enhancing the curricular, experiential, and cognitive learning of students in co-op education workplace settings.

Although there are similarities to the learning environment provided by schools, the nature of work and workplace culture provide inherently different opportunities and challenges for learning. The research team viewed the phenomenon of learning in the workplace from a curriculum perspective. Through this framework, the findings of this study have contributed to our understanding of how workplace learning is driven by a "natural curriculum." Our study shows that this unwritten curriculum can be articulated and modified for different students. Also, student assessment strategies appear to be continuously implemented as part of this curriculum. Further investigation in this new area of research will support constructive student

experiences and create meaningful opportunities for learning in the workplace. The results of this study shed some light on how such meaningful opportunities for learning do occur.

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THE 'GOOD' TEACHER? THE WORK OF PROFESSIONAL DEVELOPMENT PROGRAMMES FOR ACADEMICS

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There has been increasing pressure exerted through the national policies of many OECD countries for the professional development of the academic. Policies argue that academics need to become better teachers. Australia is no exception in this, as is shown by the emphasis on professional development in the West Report (1998). There has also been discussion in the literature about the changing nature of academic work within increasingly globalised teaching environments, where institutional flexibility and competitiveness are key policy aims and pressures. Academics are increasingly required to be flexible and self-reflexive (Edwards 1997; Nicoll and Edwards 1997; Nicoll 1998), innovative and creative (Zuber-Skerritt 1992), responsive to change, and able to provide efficiencies and effectiveness in performance.

Professional developers focus in various ways on how academics might be equipped to teach in this environment, the pedagogies and skills that they might require and how programmes might support such improvements. Views of how this might be done are mediated in complex ways through a diverse range of pedagogical models, theories, and descriptions of what teaching work requires, which are constantly under revision and contested.

These programmes, however, are always premised upon specific understandings of what it means to be professional and engage in 'good teaching'. By and large, both professional developers and academics accept this as a struggle to clarify what good teaching entails through better descriptions, and view professional development programmes (PDPs) as processes whereby academics learn to act in accordance within such descriptions. This view is made possible through a realist understanding of the nature of teaching and professionalism, whereby what is required in teaching work *can be* identified as actions in the real world that are then described and learnt through pedagogical processes.

Dominant notions of PDP therefore assume a realist epistemology within which language is superstructural, reflecting the material world in a variety of ways. Descriptions of the good teacher are taken literally. However, this is the product of a particular view that ignores the socially constitutive role of language, that it represents rather than simply reflects reality. This suggests that dominant discourses may be problematic as they assume that one can simply determine and describe the performance domains and criteria, skills or capacities of the work of a good teacher. They focus activities on attempts to increase understanding of what 'really' needs to be done, and measurement of whether performance criteria reflect this, even though such understandings and measurements may never be fully possible. This is significant as these discourses then mask questions of what such descriptions signify as and within discourses, and how descriptions of the good teacher get constructed and accepted as discourses of truth. By taking a view of language as discursively constituted, descriptions of the good teacher are viewed as worked up, produced, and maintained. This view allows examination of the *work* of these descriptions in reconfiguring academic subjectivities and practices.

This paper begins to examine a small part of the terrain that is opened up by taking a discursive view of descriptions of the academic as good teacher. Here the question is over how descriptions within PDPs may act to work up particular truths. It takes one example to expose some of the discursive strategies that may operate. What is presented is only a small exemplar of a larger project to explore more systematically discursive work within the pedagogical processes of a programme offered by the Open University. This wider project examines processes whereby the academic may become 'normalised'. These are processes of 'subject formation' in the production of academics as active subjects with particular dispositions (Foucault 1980). Such a subject is produced through mechanisms of pedagogy that operate 'through the delicate and minute infiltration of the ambitions of regulation into the very interior of our existence and experience as subjects' (Rose 1989: 10).

The paper is in two sections. The first section begins a reading of the rhetorical strategies around what constitutes good teaching within the programme materials provided for students. It is concerned with how descriptions of good teaching are worked up so that they appear factual. The second section identifies some of the wider implications of a discursive approach for understandings of PDP, in particular, more emphasis is placed on the discursive effects of PDPs. Here, processes of PDP are considered as related processes of truth construction, 'confessional practices' (Foucault 1980), and as mechanisms of normalisation.

A reading of a description of good teaching

This section begins to examine how course materials within the Open University's PDP for academics act to work up particular truths of good teaching and the good teacher as factual descriptions. It takes one small section of the programme text to explore some of the rhetorical devices and techniques that operate to construct knowledge in a particular way and of a particular form. These are discursive strategies that are part of pedagogical processes, although they may not normally be seen as such.

The analysis draws on an exemplar at the beginning of the *Course Guide*. This example is chosen as it includes a list of descriptors of 'improved' teaching, implicit within which is a description of the academic as a good teacher. This description is, to some extent, related to work for the first assignment within the programme. The assignment requires that the participant make him/her self available for scrutiny through a description of the kinds of development of teaching that he or she aims to achieve. An extract of this text is presented below.

Activity 2

Note down what it would mean for you to have improved as a teacher.

How would you know you had improved?

What evidence would there be?

Then compare your answers with the list below. Add to your list if you like.

You might be able to show that you had improved as a teacher if:

- you had a wider range of teaching methods that you could confidently include in your teaching plans, knowing that you could use them well;
- you had a wider range of methods from which you could choose during a class if you felt you needed to change something;
- your teaching was consistently good rather than good only some of the time;
- you felt that you were a popular teacher who made your subject exciting to your students;
- a high proportion of your students showed enthusiasm, made good progress during the course and did well in the assessments;
- you were less constrained to use habitual or traditional methods;
- you could describe more accurately what was going on in the classroom, what was happening inside your students' heads;
- you were more confident in the teaching choices you make;
- you could prove, rather than just feel, that you were doing the right things, teaching in good ways;
- you could recognize problems when they occur and diagnose the likely causes.

(The Open University 1998: 8)

This activity requests the students to 'confess' their discourses of teaching and learning in order that they be available for self-scrutiny, but at the same time to configure these 'appropriately'. Prompts are given through the list of exemplars of improvement. The participants are invited to draw upon these exemplars, and their lists may end up in part formed of them. This, then, is a rehearsal of 'appropriate' subject positioning. The strategy is one commonly drawn upon within pedagogical contexts, whereby the participants' views are elicited and normalised at one and the same time.

How does the description of improved teaching in this activity work rhetorically? Jonathan Potter argues that 'reality and factuality are worked up using a set of rhetorical devices or techniques which may be specific to particular settings' (1996: 102). What are the devices and techniques that invite confession and normalisation?

A first rhetorical device used here is that of 'modalisation'. Modalisation is a resource that is commonly used to either build up descriptions so that they appear factual and unproblematic and separate from the writer, or make them appear suspect or provisional, or subjective in some way (ibid: 112). A description of improvement such as is presented above could be written as a fact, or, at a lower level of a hierarchy of modalisation, as a claim belief, hypothesis, thought, guess or possibility. At lower levels, the facticity of a description is qualified in some way. This works in part by indicating that the description is subjective, which makes its facticity suspect or provisional. The more objective or distant from the writer a description is indicated to be, the more secure its facticity appears. This is a process of reifying that enables the description to stand rhetorically as in some ways more secure and 'true'. Within the description above, however, there is some qualification of facticity: 'You *might* be able to show that you had improved as a teacher if: You

had...'. This 'might' then appears in the first instance to leave some doubt as to the facticity of the list of descriptors, although there is no detail as to what this qualification might signify.

Further examination of the description, however, shows that there is intended to be little doubt for the reader that the descriptions of improvement are to be taken as factual. Any possible ambiguity over their facticity is displaced through the instructions given: '[t]hen compare your answers with the list below. Add to your list if you like'. It is quite clear from this instruction that the descriptors are to be taken as factual answers to the question of 'what it would mean for you to have improved as a teacher?', even though they are not necessarily the only ones possible.

The qualification 'might' then appears rather out of place – why suggest that the descriptors are in any way provisional when they are to be taken factually? This strategy is however often used within pedagogical texts and may do particular work. Through the very suggestion of provisionality, the description acts rhetorically in two distinct ways. First, it lays itself open to contestation by the reader. This may, rather paradoxically, act to help build up its facticity. This idea may seem at first rather strange, but a truth teller should feel secure in opening up his or her descriptions for scrutiny, as truth is measured by its faithfulness in reflecting the real world. In a pedagogical context, it may be that this strategy of qualification works to build up the facticity of the description by opening it to scrutiny in this way.

A second and concurrent act is in protecting the description from potential future undermining. The more provisional the description is in the first instance, the less easy it would be to undermine in the future, if what is described turns out to be not the case. This kind of 'defensive' technique is often used within empirical descriptions. Descriptions within an empirical repertoire commonly use qualifications to indicate that data cannot prove something absolutely, but only to particular levels of certainty. In pedagogical descriptions, a similar strategy of qualification protects the description from the danger of future arguments that could undermine it if it was presented at a higher level of modalisation. This second strategy then operates to some extent together with the first to build up the facticity of the description. It does this by protecting the description from potential undermining.

A further strategy used acts as 'offensive rhetoric'. This helps to undermine or, open to question, the facticity of the alternative descriptions that have been produced by the participants, and to some extent reframe them. This is a common offensive strategy used within descriptions: 'a description will work as offensive rhetoric in so far as it undermines alternative descriptions. It may be constructed precisely to rework, damage or reframe an alternative description.' (ibid.:107) By opening alternative descriptions to question and suggesting that they might be reframed, through the words '[t]hen compare your answers with the list below. Add to your list if you like', the PDP text works to undermine or 'ironize' the alternatives. By offering a description within the text, and suggesting that the participant might compare answers and add from the list to their own, the facticity of their own list is left open to question and improvement. The reifying and ironizing of descriptions, and the offensive and defensive rhetorical strategies in the PDP text all seek to position the participants in particular ways and engage with the text as an authoritative account of what constitutes good teaching.

A further strategy is the management of 'interest' or 'stake'. These are rhetorical strategies that are commonly used to reduce the possibility that a description will be assessed by the reader as motivated by the particular interests of the author(s) in some way, rather than accepted as solid and unproblematic (ibid.: 125). A factual account is disinterested. In the PDP text, interest is managed by turning the focus to the understandings of the participants. Any potential question over the motivations of the authors is thus undermined through a focus upon the readers own motivations. The focus on 'you' points towards the treatment of the descriptions as quite separate from the speaker and their interests. Here, then, the focus on the participant's own understandings of development, and implicitly their motivations in enrolling on the course, can be understood as a management strategy. This helps to ensure that the reader does not focus on the potential stake or interest of the authors in producing the description.

This example does significant rhetorical work to build up certain descriptors of improvement as facts that are indicative of the 'good teacher' and offer particular forms of subject formation. Through the rhetorical work of such descriptions the capacities of the teacher in relation to 'right' activities and 'good' teaching are powerfully produced. The alignment of the participants' in relation to these descriptions requires further strategies, in particular, the kinds of proofs upon which the good teacher is to base certainty. The PDP course provides a space within which participants are able to prove themselves as able to be described as good teachers. This entails forms of observation and examination. This is evaluation from 'outside', but also a dividing of the self through self-evaluation. Implicit then in the description is a teacher who is observed and examined in a search for the proofs of good teaching, although this may be through self-evaluation. The onus of responsibility for the provision of proof of good teaching is laid at the feet of the individual teacher.

The work of discourse within PDPs

The turn to language since the Second World War has done much to open up fresh avenues of investigation within and understanding of processes and effects of pedagogy. A full discussion of the implications of such an emphasis is not possible here. However, a few key points are worth highlighting in relation to PDPs. First, professional development programmes construct – build up the facticity of – knowledge of what it means to be a professional through their descriptions, and combined with confessional practices, work to normalise individuals so that they are pre-disposed to act in particular ways. Discourse is actively constitutive: 'discourse constitutes...objects of knowledge, social subjects and forms of "self", social relationships, and conceptual frameworks' (Fairclough 1992: 39). Programme documents – learning materials, programme guides, assessment descriptions, assessments, and so forth – do not simply reflect what is to be communicated between individuals. Through their work, objects of professional knowledge, professional subjects and relationships, and conceptual frameworks are built up.

Second, any discourse of what it means to be professional is produced by prior discourses and relations between them. There is an interdependency of discursive practices as 'texts always draw upon and transform other contemporary and historically prior texts' (ibid.). In other words, discourses are 'interdiscursive' and texts are 'intertextual' in property – 'any given type of discourse practice is generated out of combinations of others, and is defined by its relationship to others' (ibid.). The discourses that are in part embedded within the languages and texts of programmes are always related to prior discourses, languages and texts, and are defined by these.

Third, professional development is a mechanism for the reconfiguration of discursive practices that masks its work by maintaining itself within realist discourses as a pedagogical process. Discursive practices are exercises of power that constantly pervade all aspects of social life and are successful in proportion to their ability to hide their own mechanisms: 'Power does not work negatively by forcefully dominating those who are subject to it; it incorporates them, and is "productive" in the sense that it shapes and "retools" them to fit in with its needs' (ibid.: 50). A discursive examination of PDPs is an examination of the strategies and effects of power, as it is instituted through pedagogy.

A discursive approach to professional development programmes may involve the examination of claims constituted within them as 'truths' and the strategies through which their truth is worked up. It involves seeking to reveal the effects of programmes in their reconfiguration of prior discourses of knowledge and truth. It involves examining what this does in reconfiguring 'subjects' who then may act in different ways. It, thus, involves locating discursive practices as exercises of power within pedagogy, pointing to the exercises of power within those practices, and examining their effects. This is not to adopt an approach that is opposed to such power but to seek to examine practices of professional development for the discursive work that they do.

Power within discourses is exercised through struggles over truth, but power is not equally exercised, as PDPs are produced in order that they may subject. They normalise, as they powerfully produce 'subject positions' to which subjects are expected to allocate themselves. In taking up those subject positions, individuals are made active and productive. Here descriptions of, for example, performance criteria represent social norms and are a powerful instrument of normalisation. These work to the extent that they reconfigure the understandings and practices of those whom who participate in them. At the beginning of a PDP, interpretations of the criteria that are embedded within the descriptions of the programme may be widely diverse, as participants and teachers are already normalised into a range of subject positions of institutional, disciplinary and personal cultures. Throughout the duration of a programme, these interpretations may be expected to become relatively more stable and convergent, as participants' interpretations become normalised to those of their tutors, as descriptions of truth are built up and as participants are 'observed' and 'examined' (Foucault 1979; Nicoll and Edwards 1997). Participants are required to examine themselves and to make this visible through confessional practices of documentation and measurement – to make themselves available for judgement, to be deemed competent or incompetent (in or outside the norm). Individuals become increasingly visible as active, productive and 'normal' teaching academics as they adopt 'techniques of the self: the ways in which we are enabled, by means of languages, criteria, and techniques offered to us, to act upon our bodies, soul, thoughts, and conduct...' (Rose 1989: 10). In this all are normalised – academics and professional developers.

Descriptions of the good teacher and confessional practices operate in this way to intensify forms of surveillance and subjection. This is apparent within programmes where the subject produced is one who is required to be observed and examined from outside, and desires to continue with the practices of self-

observation, examination, and confession, through, for example, forms of peer, collegial and self-surveillance.

As has been suggested above, a discursive approach to the examination of pedagogical processes could take up many different trajectories. The study that is described to some extent here begins a 'reading' of the work of language within discourses of pedagogy; it seeks to reveal the implicit rhetorical strategies as pedagogies of PDP. A reading of descriptions embedded within programme materials has served to exemplify and expose to some extent the discursive strategies that attempt to work up the truth of particular descriptions of the good teacher. In the near future, these will be examined for their effects in subject formation through readings of participant 'confessions' within assignments, their interactions with their tutors and through interview.

This reading has drawn on the work of Potter (1996) whose analysis can reveal how a description is *made* to seem factual through rhetorical work. These strategies can be viewed for their dual work of 'reifying' and 'ironising' descriptions of truth – building up their own facticity and undermining alternative descriptions at one and the same time. This allows a form of discourse analysis where PDP is seen as something that has to be *achieved* through language, and can show *how* this is done through the struggle between alternative descriptions.

Coda

What can be said about the contribution of this kind of analysis to discussions about the changing nature of academic work and identity? The subject required is suggested to be flexible and self-reflexive, innovative and creative, always responsive to change, and able to provide efficiencies and effectiveness in performance. One point may be that such subjects may be increasingly bound to provide proof of their good teaching. However, proofs of this sort can only go so far, as they are born of realist discourses. These discourses assume that the teacher *can* determine and describe what is required, and thus focuses activities on what 'really' needs to be done, and measurement how far their performance achieves this.

A move towards discursive readings of teaching work suggests that there may be alternative descriptions that are marginalised through rhetorical work of language within PDPs. Here the good teacher could be described in terms other than in relation to a pre-determined reality that then has to be matched. Such descriptions could be examined for their discursive and productive work. This would place emphasis on the constructive work of descriptions of good teaching and what these might do within specific locations. The emphasis would not be an empirical proof of effectiveness in realist terms. It would rather surface their power and enable rhetorical counters to be formulated more explicitly.

Realist epistemology is rhetorically very effective. However, by only considering PDP in realist terms it becomes premised upon a view of reality that frames up particular forms of pedagogical models, theories and descriptions of teaching. These do not allow interrogation or contestation of the processes of or effects of programmes outside a realist view. The debate is over what is the true description of the good teacher. 'Good teaching' can also be taken as discursive constructions that are rhetorically worked up as facts. This allows alternative engagements with such descriptions and the work that they do. It is to such an engagement that the larger project, of which this paper is only a beginning, is addressed.

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PROFESSIONAL IDENTITY AS LEARNING PROCESSES IN LIFE HISTORIES

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This paper considers how to theorize the subjective side of work within a life history perspective and on a critical discussion of the notion of professional identity. A life history theorizing is seen as a complementary contribution with other concepts of knowledge, profession identity and learning. I see a direct connection between a life history approach to learning processes and a critical sociology of knowledge.

Most studies into work life deal with industry. This paper refers to work domains that you might term professional or semi-professional: Engineers, social workers, nurses, pedagogues, police.(....) In a couple of specific research projects with slightly different aims we collected a comprehensive empirical material - partly a number of life history interviews, partly a background knowledge about the development within the corresponding work domains (END NOTE).

Why focus on professionals and professionalization: reflexivity and expert society

Our interviews exposed a close interrelation between professional learning and personal development. I think this has a more far reaching perspective as a spearhead of a general development. The demand for a lifelong qualifying process for work will include an ever growing demand for/enabling of personal development in the form of a subjective involvement and taking responsibility, at the same time as work will rely ever more on specialized competencies and societal division of labour. More and more people may become professionals and semi-professionals in the double sense of being knowledge based and subjectively involved in their role within the division of labour. At the same time, however, the relation between knowledge and subjectivity, is becoming more delicate. In the classical professionalization the individual subjectivity is more or less entirely integrated in a professional identity, based on unquestioned expertise, and often connected with a great but well defined power. If the trinity of expert status, knowledge, and subjective involvement on the one hand has been spread to a larger part of the population, then the relation within the trinity on the other hand becomes more multiple and fluid. The political implications seem obvious (.....)

The ambition with a life history approach to knowledge and competence could be to establish a critical complementary to the knowledge sociology, which can connect the critique of rationalities with the social practices of everyday life. It should ground the idea about social dynamic in concrete identified historical subjects - and thereby also in the question about their learning processes. Professionals are individuals who in a specifically direct way incorporate the societal knowledge, and who on an institutional level stabilize subjective views and practices.

Profession and subjectivity

(....)Within theory of modernization professionalisation appears as a moment in rationalisation of society - and the professionals therefore as those agents in whom the contradiction between the aspects 'rationality' and 'reification' is directly embodied. (....) We could also see the individual subjective actions as historically concrete versions of societal rationalities - and so professional practice as one of the forms in which contradictions and dynamics of this rationality is embodied. The reason that becomes particularly interesting is exactly the briefly outlined development of a reflexive, knowledge based society, which penetrates everything and so to say 'secularize' rationality into a battle field within the social practice and 'somebody's' subjective action.

The professionalisation of public human services may be even better (than engineering) illustrates that the division of labour and the knowledge based specialisation penetrates ever more comprehensive parts of the life world. Or, to put it differently: Reflexivity as a characteristic of modernity is not an individual, but a societal quality, organized in division of labour and differentiation of individuals' conditions for learning and knowing.(....)

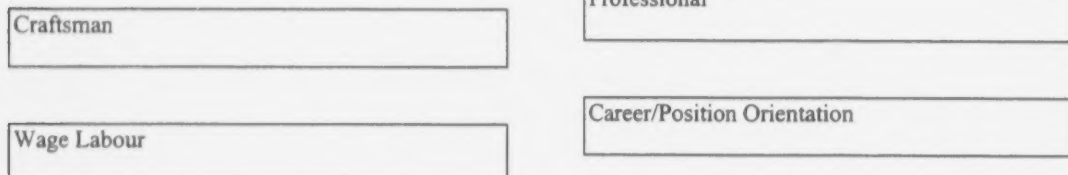
The basic theoretical problem is to establish theoretically, and afterwards to link two independent dynamics - social history and life history. There is a tendency in work life research to examine subjective phenomena as attachments to the sociological, technological and economical conception of work. The inner and independent dynamics of subjective development is mostly not accounted for - or if it is: then in entirely psychological concepts, which do not conceptually integrate societal contextual factors - here especially work. (.....)

Professional learning as a personal development in the human services

We have been very interested to find out which emphasis people put on work relatively, how their life spheres interact, how they themselves define their relation to work. Work identity and professional identity are ways of apprehending meaning to work in general and to specific contents of the work - of course it reflects what the work offers/demands - but it is primarily a subjective assigning of meaning. The subjective relation to the profession and to specific contents of the job is grounded in a life history context, and therefore very individual. They are however not individual case stories - there are gender, generation and cultural systems interacting with educational system and labour market structures.(...)

We have been able to recognize 4 different work and professional identities.

FIG 1:



The two on the top refer mainly to an engagement in the content of the work, and the two lower ones mainly to some form of instrumental outcome - and you may also more or less distinguish a dimension of historical development in the sectors. Since the sectors are extremely different in the quality of the work, in work organization, in recruitment and career structure - and finally in gender composition, these labels do mean something different in each sector or profession.

The people we have interviewed within human services are deeply involved in their professional development - most often it is not possible to distinguish clearly a professionally oriented learning and a personal development - they interfere and together form a life history with learning, blockings and leaps.

For some the interaction between developments in the life spheres is a conscious life strategy. A pedagogue, who took regular university degree programmes going far beyond the profession and at the same time continued her work career, had arranged her life course so that she would pause and have children - having scheduled when she could continue - like she had previously interrupted studies in order to take a job as an institution head. To her the challenges of the job and professional education were subjective development options, not just meaningful in relation to the work sphere - however recognizing that you cannot do everything all the time.

A nurse who was trained in a traditional practise oriented nursing and had been professionally active throughout her career, including taking specialist courses. At the time of the interview she had moved the emphasis in her involvement from work into interesting and challenging leisure activities. In her presentation it appears that this choice has to do with a certain alienation to the latest development of her concrete job - she has consequently defined a professional role and a leisure activity who complement each others, arranging her life differently from before.

It is characteristic for several nurses that they feel professionalisation and the 'academizing' of their domain as a threat to what they see as the core content. They have become nurses at a time where the core function was practical caring and the human contact with the patients. Their professional competence is communicatively rooted in practical experience. This appears to be a gendered work socialisation, however we have observed the same approach to the profession from male nurses. The common label 'crafts(woman)' covers the rooting in concrete work processes, even if the female nurses may have imported it from their general gender socialisation and their house mother competences. The present development in the profession puts demands on them that they are not able to or do not want to honour.(.....)

I will present a little more detailed case, another teacher, who herself emphasize a high level of identification with the teaching profession. Never the less she feels that she has to reduce her professional involvement because she has had children after several years of work career - which was on the other side very easy because the children and her family offered new opportunities for her. She also, however, reports about disappointments in her job.

Vibeke

Vibeke is married, 39 years, and has two children (3/7 years). She has a strong identification with her profession - she 'thinks as a teacher all the time'. What ever she experiences and sees, is considered as a potential contribution to her teaching. As a teacher she has an engagement far beyond normal work hours. And, as she thinks, in teaching you are always working with your entire personality - it is difficult to see yourself as wage labour.

She gives glimpses of a childhood experience with her father who was a 'literate worker' and who has strongly influenced her curiosity and interest into learning. She has internalized this attitude as a part of a general attitude. To be a teacher is a part of Vibeke's personal identity, and she has been very devoted to the profession ever since she finished studying. She has been working most of the time in a private school with a quite high ambition and responsibility.

Working conditions for teachers have changed quite a bit during the latest few years, she feels. New regulations of duties, more detailed than previous ones, have influenced notably in everyday life in the school. This way of counting the minutes does not comply with Vibeke's conception of an involved teacher, because she thinks it strangles the involvement and initiative from the side of the teachers. Also a change in the educational tasks has taken place, influencing the working conditions. The mission of the school today is comprehensive, it is expected to manage all the problems of the pupils, at the same time as the proportion of 'problematic kids' is inclining. The result is a reduction in time for what Vibeke sees as *the core of teaching, the solid teaching of school subjects*. Altogether it has influence her experience of work conditions, which

now seem to be uncertain and contradictory to her professional identity. The structural requirements towards the work cannot comply with her professional identity, and the job satisfaction is severely reduced.

Vibeke has always devoted much energy to her work, but as she raised a family with husband and children she began to prioritize family life. It has become more difficult to identify with the role as a teacher to the same degree as before. The dilemma also appears to Vibeke to be partly gendered - as children arrive one of the partners will have to reduce professional and educational activities for some years - most often the woman.

Vibeke now sees herself in a situation where working conditions as well as her own life course imply a shift in her professional ambition. A high level of professionalism is difficult to maintain during a whole life, and Vibeke is facing a shift where her professional orientation is influenced by other circumstances, that seems to drive her in the direction of a more wage labour like orientation - in spite of her feeling of a high degree of identification with the profession.

We cannot know how her professional life would have developed had she not had her children now - may be she has already earlier in her career encountered equally big difficulties, but handled them or tolerated them because she was not in a position to chose the children - or may be she would at that time have changed job in stead of resigning a little bit, as now.

The subjective dynamic in this work identification is certainly strong. The positive image of 'the good teacher' is nourished from her memory of a childhood with a father - a memory which qualifies the professional identity into an autonomous expression.

Where did real engineering go? - The vanishing professional identity

(To be told at another occasion....)

Theoretical approaches - the identity concept

I would like to explore the concept of *identity*, which signifies the subjective component of a structural nexus of the work society (mutually interrelated structures and processes). In everyday language the notion assumes a successful accordance between a coherent individual and a social reality (incl work) which is at least from the point of view of the individual, integral.

This is of course in many respects an ideological and false perception. Especially for adult education it removes the potential for understanding the dynamics of learning as a result of the dynamic and conflictual interaction with reality, performed by a subject with its own inner dynamics and conflicts. However problematic it also seems an inavoidable key notion. Let us assume that it is only a preliminary and indicative concept, covering a contradictory and dynamic subjective process, coping with a contradictory and complex reality of the societal work.

Why speak about 'work identity' when it seems awkward to our interest? - Mainly exactly because it is *ideological in a marxist sense*: It delimits the right problem in a wrong way that is produced by real human practice. So a critical elaboration of it may serve a theory building purpose.(.....)

In Ute Volmergs study (1978) of the *identity threatening* quality of industrial work she sees identity as the subjective capacity to establish defencemechanisms, and so stand industrial work in capitalism. As an alternative (to dominant Erikson) frame of understanding Volmerg refers to Lorenzer's materialist, though not biologically reductive, theory of socialization (Lorenzer, 1972): The biological development and the (necessary) social interaction around the needs of the child gradually produces the individual subjectivity. The Mother-Child-Dyade is the first 'common subject' for this production of patterns of practice. Later, through the gradual separation of the child from the mother, the interaction becomes the production process of the *interaction patterns* of the child and acquisition of language. Or: Through the separation and the interaction with physical and social reality the child gradually build up its individual subjectivity. Subjectivity in this theory is a societally produced, culturally mediated way of coping, which is specific for each individual. Contradictions of societal structure are built into a systematically contradictory, though individual, subjectivity. In opposition to Erikson's cultural concept of society, leaning on Lorenzer's very basic definition of the material character of the social, Volmerg sees the societal work as the basic identity building factor, in the mediated form in which it appears in the interaction of the individual child with its primary relatives/relation persons. When the individual later interact with and in work, he/she draws on interaction patterns produced in the early socialization.

So we have at least an outline of a psychoanalytic psychology of work, which specifies human labour as a produced subject, and work as a societal reality. (...) However, critical theory should not (only) be a fixative which elucidates and preserves this epochal picture of the relation work identity/industrial work. It must conceive how individual subjects and societal work is produced by each others, and detect the historical genesis and changeability of this interaction. Identity is a delimitation of a field of interaction and conflict. Societal displacements and shifts on the one side, and individual life histories, with their experiences of society, are different registers and rhythms. But identity must be conceived as a field for an ongoing production of subjectivity.

Contradiction and ambivalence

Lorenzer's theory of socialization sees the individual psychological development as an acquisition of an individual variant of society and culture, a concrete mediation of societal structures and contradictions in subjective orientations and meanings - in this perspective 'identity' makes sense as an individual ability to (re)produce and differentiate this subjective experience in relating to the actual reality and its new phenomena.(....)

Regina Becker-Schmidt et al researched the subjective relation to work of female industrial workers - especially the double work as house wives and workers in industrial jobs with lousy conditions and very limited space for subjective action. This analysis assigns work a much more complex and multiple meaning, without in any way to idealize the industrial work. On the one side it analyses the concrete and societal contradictions in work, focussing on the experience of time. On the other side it searches traces of subjective conflicts of meaning - ambivalencies and ambivalences - in the way of handling these conditions of every day life. Objective contradictions are mediated through their subjective meaning. Ambitendency and ambivalence are rooted in objective contradictions.

The theoretical point in these modifying notions is - beside an analytical differentiation - that it opens up the concepts to the complexity and changeability of real history. On the one side a life history dimension - subjective meanings must be interpreted as possessions through life history, that are structured by initial socialization, but are also dynamic potentials throughout life - or in this context: Learning potentials. On the other side to study the objective dynamic in its own right - an open examination of the new developments of work, and the subjective appreciation of objective trends (.....).

Expert knowledge -having been an instrumentalized and reified vehicle of capitalist modernization and social control - may now be positioned in a context of modernization and democracy. It depends on the politicization of work, and on the learning processes of professional workers.

But we need a theory which can search for and contain a learning aspect as well as an active and shaping involvement in work. We need to include a more anticipating aspect in the concept of identity. *Self regulation* could be such a complementary or comprehending perspective. The development of new types of work could be examined in the perspective of their potentials for learning, and the subjective involvement in enhancing self regulation. *Self regulation* may have a voluntaristic connotation, or it may be perceived as a regulation within and controlled by a capitalist setting. (...) The intention on the contrary is to emphasize the utopian and dynamic potentials in everyday work life learning. (....)

Collective experience and institutional discourse -a subject-object dialectic

Let us try briefly and preliminarily to apply these concepts on professional identity. I think we could see the identity *process* as an ongoing concern of the professional in a field with two main *objective* elements: The *practice* of his/her work, with its more or less contradictory and coercive conditions, and with social interactions with other people (colleagues and clients), missions and changes to which the professional has to and wants to relate. And a *cultural institution* consisting of the profession as an institution (with legal or moral bands) and a professional *discourse* (academic or habitual).(....)

A *life history approach* applies in order to 'see the social institutions and discourses from below and in social practice' - but also in order to see the subjective contribution of the learning persons to the profession and its development. This is quite simple, yet I think it has fundamental implications, that could be specified in relation to well known, important theoretical positions.

Let us for a moment go back to the case of Vibeke. By content her professional identity is relating to a normative definition of the core of the teachers work: The solid teaching in school subjects. In the case of Vibeke a great endeavour and a strong involvement in teaching has been organized in this identity(....) - and probably still do in spite of her feeling of inclining difficulties. It has been in accordance with a specific

school and situation, but has left her more vulnerable to 'social work aspects' of education and to changes in the tasks.

This profession model can be identified as one out of two dominant profession definitions of teachers, that have accompanied the modernization of school. The other one is an academically based technical definition of a pedagogue. During a historical process where teachers have lost their traditional aura, and have resigned from the personification of moral and cultural values, teachers have (had to) become professional pedagogues or competent subject teachers.

Vibeke's professional identity has guided and encouraged her, but also restricted her learning potential. The way she now sees the pupils as increasingly problematic indicate an exclusive aspect of this discourse. You could see this double sided quality in line with a Foucault-inspired discussion of the professionalization of education like Popkewitz & Simola (1996). Beside the critical quality of a Foucauldian approach, which reveals the repressive aspects of discourses, and the specific social interest constellation behind in this case Finnish academization of education, Popkewitz and Simola also have an awareness of the empowering aspects. This is not just a triviality - we do know of alternatives to professionalization of teaching when traditional structures of moral and cultural fail: dissolution and anomia, or authoritarian mechanisms. So the professionalization as an empowerment is highly political, and depend on the learning process of teachers.

But let us look at the subjective side. The discourse of teaching and teacher identity seems to be an obstacle to meeting new demands. A subject oriented definition of teaching is also a way of handling the modern loss of auratic status of the teacher and the school. For Vibeke it is synthesized with the life history identification with her father who was a role model very similar to the 'traditional' teacher - a personalization of thirst for knowledge and a caring authority - and the professional devotion to subjects becomes a legitimate position which enables a shield against a generally excessive burden on a teachers consciousness, that is becoming impossible for Vibeke with the shift in her own family situation. To depart from the ambitions of being a personally involved teacher would not be bearable - to realize that the new duty regulation and the new quality of children does not allow her to reach her ideal teacher's image is more bearable. Vibeke's explanation is clearly one of defence - not against any management demand or formal requirement, but against her own demand on herself. There is a vision or a utopian drive inherited in the professional identity, against which Vibeke has to defend her position - exactly when she resigns in her professional self definition.

The amalgamation between loving and caring father, 'literate worker', and school subjects could possibly have been differentiated by class, history, relation etc - and then something else might have happened. We do not know enough to evaluate it, but we may interpret that right now Vibeke needs to get relieved of some burdens or feeling of responsibility, that she might have taken up in another situation of her life.

The relation of the individual to developments in work, to learning and to continuing education is deeply interwoven in meaning universes of life history. Ambivalences and the tension between defence reactions and learning potentials are interwoven with meanings of life history, which may assign specific meanings to the experience. This is the subjective dynamic of identity. (.....) A life history approach to professional learning provides one way - among others - to enter into the historical and subjective process of professions' crossroads of development, with the implications drawn in the introduction of this paper.

NOTE

One project dealt with the labour market of engineering, and with engineers' subjective recognition of their lives, their educational and job career, and their life perspectives. 17 individual life history interviews have been conducted (with Anders Buch and Tania Christensen). The other project dealt with continuing education within a number of white collar and semiprofessional work domains, preferably human services. In this project 20 individual life history interviews were conducted (with Mette Vestergaard Hansen).

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LOCAL PERSPECTIVES ON GLOBALIZATION AND LEARNING: A CASE-STUDY OF THE PRINTING AND PACKAGING INDUSTRY IN SOUTH WEST ENGLAND

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Introduction: globalisation from Raymond Williams to Manuel Castells

There was this Englishman who worked in the London office of a multinational corporation based in the United States. He drove home one evening in his Japanese car. His wife, who worked in a firm which imported German kitchen equipment, was already at home. Her small Italian car was often quicker through the traffic. After a meal which included New Zealand lamb, Californian carrots, Mexican honey, French cheese and Spanish wine, they settled down to watch a programme on their television set, which had been made in Finland. The programme was a retrospective celebration of the war to recapture the Falkland Islands. As they watched it they felt warmly patriotic, and proud to be British. (Williams, 1983a.177)

... the globalization thesis ignores the persistence of the nation state and the crucial role of government in influencing the structure and dynamics of the new economy.' (Castells, 1996.97)

As both Williams and Castells have noted, we live in an economy organised at a global level, but in which culture, ideology and politics are largely organised at a national and local level. Communities, one might say, organise, capitalism disorganises:

Yet it is capitalism, especially in its most developed stages, which is the main source of all the contemporary confusions about peoples and nations and their necessary loyalties and bonds. Moreover it is, in the modern epoch, capitalism which has disrupted and overridden natural communities, and imposed artificial orders. (Williams, 1983a.184)

Williams stresses that the struggle for control over culture and politics cannot and should not be divorced from the struggle for control over the globalised economy, and for the replacement of the current emphasis on 'production' in capitalist discourse by an emphasis on 'livelihood':

The old orientation of raw material for production is rejected, and in its place there is the new orientation of livelihood: of practical, self-managing, self-renewing societies, in which people care first for each other, in a living world. (Williams, 1983b.266)

In this paper, I shall propose that both enterprises and their employees (especially through the structures of the trade union movement) can and do position themselves effectively vis-à-vis changes in the global economy, despite the best efforts of non-representative bodies such as the IMF and WTO to remove entirely remaining constraints on the activities of globalised financial capital. The idea that only culture and ideology (as opposed to economics) can be dealt with at a national and local level is essentially disempowering and pessimistic.

Castells makes a number of precise points about globalisation which are relevant to this case-study of the print industry in the south west of England:

1. The global economy is an economy of variable geometry:

... the global economy does not embrace all economic processes in the planet, it does not include all territories, and it does not include all people in its workings, although it does affect directly or indirectly the livelihood of the entire humankind. While its effects reach out to the whole planet, *its actual operation and structure concern only segments of economic structures, countries, and regions, in proportions that vary according to the particular position of a country or region in the international division of labor.* (Castells, 1996.102) (emphasis in original)

... while most economic activity, and most jobs in the world are national, regional, or even local, the core, strategic economic activities are globally integrated in the Information Age

through electronically enacted networks of exchange of capital, commodities, and information. (Castells, 1998.318)

2. Globalisation favours small and medium-sized enterprises (SMEs) employing less than 200 employees, but they may be more closely tied into large multinational corporations than appears at first sight:

Thus, at the same time, it is true that small and medium businesses appear to be forms of organization well adapted to the flexible production system of the informational economy, and it is also true that their renewed dynamism comes under the control of large corporations that remain at the center of the structure of economic power in the new global economy. (Castells, 1996.156)

3. Inequalities of globalisation are more likely to persist from previous labour markets than to be specific to globalisation:

Thus, while there are certainly signs of social and economic polarization in advanced societies, they do not take the form of divergent paths in the occupational structure, but of different positions of similar occupations across sectors and between firms. Sectoral, territorial, firm-specific, and gender / ethnic / age characteristics are clearer sources of social polarization than occupational differences per se. (Castells, 1996.220)

4. The full potential of information technologies may require new management styles to release its potential:

... the broader and deeper the diffusion of advanced information technology in factories and offices, the greater the need for an autonomous, educated worker able and willing to program and decide entire sequences of work. Notwithstanding the formidable obstacles of authoritarian management and exploitative capitalism, information technologies call for greater freedom for better-informed workers to deliver the full promise of its productivity potential. (Castells, 1996.241/242)

5. Education determines the key distinction between 'generic' and 'self-programming' labour:

Education (as distinct from the warehousing of children and students) is the process by which people, that is labor, acquire the capability constantly to redefine the necessary skills for a given task, and to access the sources for learning those skills. (Castells, 1996.341)

The structure of the print industry in the south west of England

There are methodological problems associated with attempting to give basic information about this industry. Official statistics sometimes link printing with publishing, sometimes with packaging, sometimes with both. The case-study reported in this paper refers to an initiative by the trade union Graphical Paper and Media Union (GPMU) Wessex Branch which includes part of the south west region (Dorset) but also part of south east England (Hampshire). It is not possible in a paper of this length to do full justice to all of the sub-regional and industrial sub-sector variations.

In relation to ownership, Vidler's 1999 study for the South West Trades Union Congress (TUC) highlighted the two faces of globalisation in the print industry. On the one hand, economic globalisation combined with the ability to transfer electronically information files for printing around the globe has meant that some successful SMEs have been acquired by multinationals. On the other hand, new technology and the growth of 'instant' copy and print facilities means there are new niche opportunities for very small firms serving very local markets:

The twin influences of globalisation and technological change are having a significant impact on structure and ownership in manufacturing. Transnational companies are growing rapidly especially by acquisition of successful SMEs while at the same time more accessible technologies have created greater opportunities for the growth of small businesses meeting the needs of local and specialist markets. This trend is exemplified by developments in the printing and publishing industry in which technological change tends to exceed that predicted, placing an immense pressure on the need for constant updating and training. (Vidler, 1999.8)

Smallbone et al (1999) analysed developments in printing and publishing in three English regions (south west, London, Yorkshire and Humberside) between 1991 and 1996. This suggests that 8% of total employment in UK publishing, printing and reprographic media was located in the south west counties of Cornwall, Devon, Somerset, Gloucestershire and Dorset (including Bristol, a major centre for these industries). Employment had grown overall by 5.9% during 1991-96 to 26,492. These figures are comparable to other areas overall, but mask regional differences. For example, publishing jobs had risen by 7% in the south west compared with 12% in London, while printing jobs were up by 6% in the south west compared with a fall of 8% in London; in the smaller 'other reprographic' sector (sound, video and computers) a fall of 42% in the south west compared with an actual increase of 200% in London (Smallbone et al, 1999.5). Furthermore, some activities are increasing while others decrease. Within printing, 'Composition and plate-making' declined nationally by 24% between 1991 and 1996, while 'other activities related to printing' went up by 26%.

Using a wider definition of printing, publishing and related industries, Shackleton (1998.14) shows total employment of 38,360 in the south west in 1996, with a slight projected decline to 38,000 by 2001. Thus about 1-in-60 of the region's working population are employed in the industry. A more localised study in the Bristol area (Westec, 2000.3) confirms that employment in printing and packaging rose at faster than the national average between 1993 and 1998. The major change was in the size of enterprises. By 1998, 61% of all enterprises had only 1-4 employees, compared with 40% in 1991. Over the same period, the percentage of firms with between 5 and 49 employees had declined from one half to one third of the total. In terms of jobs, 75% are in firms classified as SMEs (under 200 employees) with the share of employment in larger firms going down from about 40% in 1991 to only 25% in 1998.

Skills, divisions of labour and union activities in the print industry

It follows from the necessarily brief account in the previous section that we are dealing with a 'moving target', an industry which is reconstituting itself, in which new technologies bring rapid shifts in the nature of actual jobs, skill needs, recruitment and retraining needs and power relationships.

Within this context the print workers' trade union (GPMU) which has emerged from a series of amalgamations, following well publicised unions set-backs in the 1980s in the newspaper sector, has attempted to call on old principles of trade union solidarity to deal in new ways with changing working practices. In general terms, as will be seen in the next section, the GPMU has attempted to retain membership and an element of workplace control by strategies designed to ensure that its members acquire the new, computer-based skills required by the industry rather than allowing employers to 'buy in' such skills from outside. Such a development would not only dilute the influence of the union but also threaten the existing work culture with its established minimum standards. Computer skills are especially at a premium in the pre-press area of composition and plate-making, and the initial GPMU training effort in the case-study was concentrated here. Nationally, as noted above, employment in this area declined by 24% between 1991 and 1996 and this trend looks set to continue unless continuing favourable trading conditions allow pre-press numbers to be maintained in the context of increased output. This is also partly balanced by the new skills required in publishing houses as they move into the pre-press area themselves. In addition, other customers will use their own word processing and DTP resources to prepare material for despatch to the printing works. While further research would be needed to clarify this point, anecdotal evidence from the case-study suggests employers, especially smaller ones, are prepared to accept retraining of existing staff rather than a programme of redundancies and re-hiring, since in general terms they are looking for multi-skilled, flexible workers with a good, general working knowledge of the industry as well as specific IT skills. Shackleton (1999.22) refers to a 'blurring of skills' as print firms acquire the capacity to provide an integrated design, print and distribution service.

At the same time, a further important division of labour within the industry is between the predominantly male pre-press and printing areas, and the predominantly female finishing and book-binding area. These latter work areas are characterised by lower rates of pay and jobs which are often part-time and temporary.

The work of the GPMU on skills and training in the context of the Trade Union Learning Fund (TULF)

The Labour government in the UK, elected in May 1997, demonstrated from an early date its recognition of the trade union role in promoting workplace (and to a lesser extent community) learning. The Trade Union Learning Fund (TULF) was established by the Department for Education and Employment (DfEE) in 1998. The fund aims to 'promote innovative activity by trade unions to support the creation of a learning society' (Cutter, 2000.1). Initial Round 1 bids were for 12 months, with Round 2 running for a further 12 months from 1999-2000 and Round 3 for two years from 2000-2002.

Regional Accord for CHange (REACH) was a second round Union Learning Fund (ULF) project led by the Wessex Branch of the GPMU, operating in the English counties of Hampshire and Dorset. The project has been widely reported, for example at regular meetings and seminars organised by the Union Learning Fund, and in the press (both local and trade), and an evaluative report produced (Payne, 2000). The project has been able to draw in further funding for training through the European Social Fund, the Further Education Funding Council (FEFC) via local colleges, and employers. It has led to a further successful bid by GPMU to the third round of ULF. The purpose of this new bid – Southwest Initiative for Graphical Training, or SIGhT – is to extend the project to the other union branches in the south west region, and it will operate over a two-year period.

The project has had both short-term practical training aims and longer-term strategic aims and outcomes:

Practical aims and outcomes: the GPMU has worked with a local training provider to organise digital courses for members (mainly working in the pre-press areas), usually over 3 weekends. This has covered the main computer software used in the industry. This has been very popular and successful with members, and indeed with employers. At workplace level, learning representatives have been selected and trained. They will be able to advise individual members about training opportunities, motivate and support them in their learning and sit on company training committees.

Strategic aims and outcomes: the GPMU has developed relationships with the employers' organisation, the national training organisation, local providers, and a variety of agencies concerned with regional economic development, with the aim of working towards a sustainable structure of training into the future. Steve Attwill, GPMU Wessex Assistant Secretary, stated:

Our strategic aim is to bridge the divide between the 'old world' and the 'new world'. But we can only do this by 'following the job'. Members understand that in order to do this, it's not enough to have a skill, you must have a skill that's in demand. So, how can they get that opportunity? The union can then build on the fact that its members' labour is in demand to establish bargaining power in defence of its members' interests. Those interests are traditional trade union concerns: job security, fair terms and conditions of employment and dignity at work.

Will employers ever learn?

One of the surprising features of the print industry, to an outsider, is the relative lack of interest taken by employers in training. Traditional apprenticeships have declined without new training forms being developed. There is low take-up of National Vocational Qualifications (NVQs), despite the fact that the employers' organisation (BPIF) is a major provider of NVQ training. The National Training Organisation for these trades has yet to make an impact. The situation is exacerbated by the high proportion of SMEs, where there are problems in both funding and providing release for training (for a general view of training problems in SMEs, cf Johnson, 1999). The situation is summarised thus by Shackleton:

Despite the importance of technological change within the industry the level of training undertaken by the sector remains low with few companies using the training provided by BPIF in the region. The small size of the firms in the industry means that many often can not spare the personnel for training. (Shackleton, 1998.23)

This leads to a contradictory position in which the Training and Enterprise Council in Bristol, a government funded body whose task is to encourage workforce development, can report that printing and packaging firms are more likely than most sectors to report that 'advances in technology and computerisation' are 'important business issues', but less likely on average to consider 'skills and the recruitment of good staff' as important. (Westec, 2000.7) Vidler (1999. 6) notes the emergence of a 'skills gap' which occurs 'as firms struggle to match investment in equipment with investment in digital training for the existing workforce'. This depressing picture of training within the industry is made worse by the failure of colleges to invest in new plant for training. This is partly due to decline in apprenticeships and partly to the enormous cost of the most modern printing equipment. The deal fixed up with the college in the case-study was only possible because it involved software training which can be carried out in IT suites designed with general purposes in mind. One of the recommendations of the ULF evaluation report was for joint action by the union, employers' federation, colleges and national training organisation to explore 'the development of a regional centre of excellence for training' (Payne, 2000.13).

This picture of an uncoordinated and rather ineffectual training effort is supported by the Smallbone et al study previously mentioned. While concentrating their criticisms on the small and medium-sized firms, they note a lack of effective training policies, training budgets and management skills to manage new technology and

training needs (Smallbone et al, 1999.39). In turn these criticism have been voiced more generally by a number of the research reports of the National Skills Task Force (e.g. Johnson, 1999). The final report of this Task Force makes interesting reading: while reporting the 'very disturbing finding on the willingness of many adults to participate in learning' (DfEE, 2000b.30) there is little comment on the unwillingness of employers to take training seriously. The previous report of this group had mentioned an increase in the Labour Force Survey monthly training participation rate from 10.5% in 1986 to 15.9% in 1999, while failing to highlight that all but 1.1% of this growth had taking place between 1986 and 1990! (DfEE, 2000a.20) What the final report did point up, however, was the significant percentage of managers in small firms (27%) who had no qualifications in management or anything else. Meanwhile, a separate government report concluded that 'there does not appear to be a training culture for a large number of employees, and what training there is, is focused more on younger workers.' (DfEE, 2000c.52)

Potentially, then, there is a common interest (but not identical interest: see next section) between trade unions and employers in attempting to crank upwards the quantity and quality of training taking place in the printing industry. Trade unions want to retain their members' jobs and the union's influence; managements want a supply of skilled labour to place alongside their investment in new technology. 'Good' employers who do train want to see an end to 'bad' firms who simply poach trained staff from elsewhere. A recent TUC South West report records the new partnership approach to training in the industry:

In contrast to earlier conflicts between employers and print unions, industrial relations continue to improve, and employers and the [GPMU] (are) increasingly working together to develop training capacity. They both realise the need to develop programmes to ensure that up-skilling keeps pace with the changes in production technology. (Vidler, 1999.6)

The trade union response: an end to confrontation?

Forrester and Payne (2000.153) have argued that studies of trade union 'modernisation' in the UK have emphasised 'industrial relations issues such as the nature and direction of collective bargaining arrangements, organisational changes within trade unions themselves and union responses and strategies to changes in the labour market and to changes in the organisation of work.' The renewed emphasis on education and training has gone largely unnoticed by academic commentators. At the same time, this new emphasis, as suggested above, does not mark a decisive break with traditional trade union concerns. Equipping members with the skills required by new workplaces is part-and-parcel of strategies to preserve members' jobs, trade union membership and therefore power and influence in the workplace

It is also clear that trade union demands for workplace education and training do not simply replicate employers' demands for enhanced skills. They are likely to include issues of broader personal development as well as job specific training. For example, a number of employees in the case-study criticised the NVQ framework on the grounds that it accredited existing workplace skills but did not prepare workers for the coming digital revolution in the industry. There were also demands for more broad-based IT training, particularly for women in the traditionally 'unskilled' areas of bindery and finishing, and in the packaging sector (Payne, 2000.passim). As Cutter (2000.78) observes: 'The key value added that trade unions bring is both the ability to encourage non traditional learners into learning and to ensure that programmes are driven by learner needs.'

Formal and informal learning in the print industry

One important assumption within the policy arena that is now being challenged in the academic literature is that training leads 'automatically' to improved performance and increased productivity and profitability. While it is impossible to go into this in any detail here, a few broad remarks are pertinent. Much of this material can be traced back to the emphasis placed on the 'situated' nature of learning within cultural practices:

This suggests a program for the developing practice of studying situated activity and learning. It might begin with a conception of learning as an aspect of culturally, historically situated activity. It would focus on the content of and the ways people participate in changing social practices singled out for study because they appear to lie at the heart of the production and reproduction – and transformation and change – of the sociocultural order. The present work furnishes strong beginnings for such a project.' (Lave, 1996.30)

Stern and Sommerblad have argued that:

... it is not so much the learning processes themselves that give rise to competence development and performance improvement as the way in which they are implemented. These findings direct attention to employee participation, new workplace practices such as incentive-based compensation, and social partnership involvement in joint decision-making. (Stern and Sommerblad, 1999.xiii, in Keep, 1999.10)

Keep, in his study of employer attitudes to training for the National Skills Task Force, concluded that 'rather than see adult workplace learning as a discrete activity, it is better conceived of in the context of the personnel management and competitive strategy environment within which it takes place'. (Keep, 1999.10)

Print workers in the case-study demonstrated that:

- Managers often took little interest in the skills training courses they were attending
- Managers did not always make arrangements for them to practice and perfect new skills
- Some managers did make changes in work organisation to ensure practice and use of new skills
- The workers themselves were convinced of the value of both 'tinkering' (honing new skills) and attending courses in order to learn and apply new skills. (Payne, 2000)

It is not just that managers in the print industry tend to ignore the importance of training (Smallbone et al, 1999. 3 and 39), but that they have little awareness of how the organisation and culture of the workplace can inhibit the acquisition, development and application of new skills.

Conclusions: Local labour and global capital

The paper reaches a number of important conclusions about the global / local tension as it finds form in international debates about training and about lifelong learning:

1. Within globalisation, decisions of national governments about both economic and lifelong learning policy can and do influence the development of the new globalized economy;
2. Trade Unions are responding in new ways to the individualizing tendencies of late modern society and the global economy, while continuing to draw on the collective traditions of trade unionism. The provision of education and training for members is seen as a central role for trade unions by the Trades Union Congress (TUC) and its affiliates;
3. In responding to globalisation, governments and civil society are making new and often radical demands on educational institutions;
4. Problems of management attitudes and education inhibit both the acquisition and application of skills in the workplace.

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IMPLEMENTING WORK-BASED LEARNING IN HIGHER EDUCATION: EXPLORING CONTROL AND NEGOTIATION IN THE CURRICULUM

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Introduction

This paper is an initial output from a research project designed to contribute to our understanding of the processes through which the content of work based learning (WBL) programmes in higher education institutions is established. Here WBL is used to refer to learning through work, i.e. through active engagement in the activities and purposes of the workplace. The paper examines the significance of discourses of partnership and flexibility in establishing the need for WBL programmes in HE. It then considers the role of negotiation in working these discourses at the level of implementation of the programmes. We will draw on a case study of one programme to identify and explore issues which will be the basis of further research.

The emergence of WBL: global and national influences

The development of WBL can be understood as part of a wide-ranging set of changes associated with the development of mass higher education. Scott sets this in the context of 'post industrial' and 'post Fordist' society, and refers to a number of important changes in the economy which help to create the context for these developments. (Scott, 1995). McIntyre and Solomon (1999) have also emphasised the role of the processes of globalisation in shaping higher education policy, and helping create the conditions which are encouraging the emergence of WBL within higher education. They trace the processes through which policy weaves together various narratives of globalisation to provide a catalyst, although not a mandate, for WBL development.

In earlier work we have suggested that specific discourses have emerged in the UK at the level of national policy to encourage change and shape the development of WBL (Reeve and Gallacher, 2000). The first of these discourses is *partnership*. This emphasises the importance of higher education institutions developing partnerships with employers. Associated with this are issues regarding the need for negotiation of structure and content of programmes. It is suggested that developments of this kind will involve an element of loss of control for higher education institutions, but this is presented as an important element of change with which they must come to terms (ED, 1992; NCIHE, 1997; NAGCELL, 1997). Secondly the discourse of *flexibility* can be seen as a major theme in many policy documents regarding the need for change in HE and particularly the development of WBL (ED, 1994). This has then given rise to a number of sub-themes of flexibility regarding time, place, and individualisation, with the emphasis being placed on the potential for WBL to remove barriers to learning. We have also identified *relevance* and *accreditation* as important discourses, but we will not be able to explore these themes within this short paper.

In this paper we explore the extent to which the discourses which we have identified at a national level have significance in the context of the documents produced at a programme level, and how these may shape the WBL programmes which emerge. In this context we are also interested in the challenge to HE of yielding up a measure of control, over the curriculum, pedagogy and assessment of WBL, to those outside of the academy. It is the potential loss of *control* and the associated processes of *negotiation* (with employers, learners and other 'stakeholders') which result in the emergence of 'sites of struggle' (Solomon and McIntyre, 2000) within WBL. Our research is designed to explore these issues.

Developing a research project

The analysis presented here draws on one case-study of an undergraduate WBL programme based in a UK university. This will be used to identify key issues which are then discussed in the context of the wider literature, and will inform the research which we are undertaking. The case study programme is a framework which allows students in a wide variety of occupational contexts to study for a degree through WBL. It has not been developed in co-operation with a particular employer, or to meet the needs of a particular occupational group.

The approach to research will utilise Bloomer's (1997) notion of two levels within the construction of the curriculum: the prescriptive and the descriptive. This distinction points to the different levels of work being

done in establishing a WBL programme in HE, firstly the development of programme specifications, and secondly, the ways in which individuals or groups use these specifications. The first stage of our research is an examination of the programme documents. Within these there are two levels. The first being the validation documents designed to obtain approval within the University, while the second are ones which are designed to guide staff and students in the implementation of the programme. The validation documents can be seen as clearly prescriptive, however the second level of document, while still being prescriptive, can be seen as being transitional towards the descriptive stage.

Partnership, flexibility and WBL

Within the validation documents evidence of all four of the discourses referred to above can be identified. However given the limited space available within this short paper we will concentrate on the ideas of partnership and flexibility which are of particular interest in analysing the processes of negotiation and control.

The idea of partnership emerges as a very strong theme within the validation documents, however what this means in terms of the how the programme is structured and operates is never explicitly addressed. Thus in the Context section of the Definitive Document (DD), which provides an overview of the programme, the following statement is made.

The WBL Programme will be based on a partnership between the University, employers and employees. Partnerships between subject departments and employing organisations will be of major significance in ensuring the success of the programme. (DD)

However the rest of this paragraph does not elaborate on this concept of partnership, but goes on to discuss only the role of University departments and the unit within the University which is responsible for the WBL programme.

A similar pattern appears elsewhere in the document. The section on Course Management and Administration begins with a reference to the importance of partnerships.

The successful operation of the Programme depends on a strong and effective partnership between the University and the employing organisations, which underpins the learning activities of the employee. Both organisations require clearly defined roles for people managing the programme. (DD)

The rest of this section goes on to outline the role of the key figures. However for the first three of these posts (Programme Manager, Programme Administrator, and Subject Co-ordinator) there is no mention of responsibilities to liaise with employers or develop partnerships. It is only at the level of WBL Tutor and Mentor that these responsibilities are explored. The section which discusses the arrangements for the approval of awards and programmes also begins with a strong reference to partnership, but has no reference to employers in the detailed arrangements which are outlined.

It would appear then that the idea of partnership is being used to reflect the wider discourse of partnership emerging from policy in the UK which we have referred to above. However this appears to have had little impact on arrangements for the programme management, or the processes through which programmes are approved. One may speculate that one reason for the use of this concept is the strength of the wider discourse of partnership in advocating a desirable direction of change in higher education, and the positive role which this discourse could have in ensuring approval for the programme within the University. The question of why partnership is not referred to further in the management and approval arrangements may reflect an interest in maintaining control of these issues within the University, or it may be a more pragmatic response to a situation in which employers have relatively little interest in committing the time which would be required to be involved in these issues. These questions will be explored more fully in interviews with relevant staff. It is also useful to note that an idea which emerges in these documents, and which is related to partnership, is the one of 'joint negotiation'. This is emphasised as a means through which programmes, learning contracts and assessment are agreed between staff and students. This joint negotiation refers mainly to the relationship between students and tutors, and its importance will be discussed further below.

The second issue which we wish to explore at this stage is the one of flexibility. The importance of this concept for lifelong learning and WBL is well established in the literature (Edwards, 1997; Garrick and Usher, 1999). Within our case-study it is emphasised as a key feature of the programme, and is mentioned in three of the six programme aims, for example

provide the university with a varied means of offering flexible learning opportunities to learners from a variety of backgrounds, and with a variety of educational experiences.

This flexibility has a number of dimensions. Students have flexibility with respect to the range of disciplines within which they can work and the choice of subject for learning contracts. A range of flexible methods of delivery and student support is used, and there is flexibility with respect to the pace of progression.

It would appear that, as with partnership, flexibility is being emphasised because of the persuasive power of the wider discourse of flexibility. However this raises important issues for both staff and students as to how this flexibility is to be subjected to some form of regulation to ensure that a workable system is created. The ideas of negotiation and approval again becomes important in these processes, and are mentioned in the first programme aim

provide flexible opportunities for participants through negotiation and approval of work based programme framed through a learning contract.

Negotiation is clearly emerging as a key element in the processes through which the aims of partnership and flexibility can be achieved. The importance of this idea becomes even stronger when the implementation documents are considered. We will now explore more fully this issue of negotiation.

Perspectives on negotiation in WBL

We have seen how in the case study the idea of negotiation emerges to supercede the theme of partnership and to provide a means of implementing and regulating flexibility. In making this discursive move the example reflects perhaps the prominence of 'negotiation' in the wider literature on WBL implementation. Indeed in their review of WBL programmes in the UK Brennan and Little suggest it is the presence of negotiation, between individual, employer and higher education institution, which distinguishes WBL from other forms of learning (Brennan and Little, 1996). They go on to acknowledge the different variables which affect the extent to which different 'stakeholders' have a say in negotiation, suggesting a diversity in WBL programmes and institutional practices.

In considering perspectives on negotiation from the literature on WBL we will be restricting our gaze to accounts of the process of developing the content of programmes. Here we see the emergence of negotiation at two levels of content development, negotiation of the general content of the curriculum, and negotiation of the individual learner's programme. These are of course inter-related issues with the level of specificity reached at one level impacting on the outcomes of the other. For some the emphasis is on the negotiation of programmes with major employers to meet organisational strategic objectives (Garrick and Kirkpatrick, 1998). While this model relates to the development of 'bespoke' programmes others address a wider market, taking the needs of a professional group or a sector as the starting point (Winter and Maisch, 1996). Another alternative, suggested by Foster and Stephenson (1998), is the developed of programme frameworks to facilitate career and personal development where the learner is identified as the immediate client and the skills of 'learner-managed' WBL become a focus for the curriculum. Of course such categories are not mutually exclusive, for example bespoke programmes developed for particular organisations might well include a focus on the processes of managing learning. What is significant here is the different possible starting points for the negotiation of the curriculum, where at one level considerable work may have been done with employers to specify content prior to entering into any detailed consideration of an individual's programme. Alternatively only very general outlines may exist to guide individual negotiations.

In looking at the second level of negotiation, that of the individual's programme, several themes begin to emerge from the literature. Firstly we see the close identification of this level of negotiation with learning contract development. Thus WBL contracts are the means by which the negotiation will take place and conversely 'negotiation is central to the process of establishing a contract...negotiation is needed at every stage' (Brennan and Little, 1996, p.89). Secondly there is some agreement on who the main players in the negotiation should be. These are identified as the employer, individual learner and the higher education institution, who will operate in a three-way partnership, to undertake a three way negotiation, in order to meet the needs and concerns of all three main stakeholders (Foster and Stephenson, 1998; Brennan and Little, 1996). The suggestion here is that three into one will go, with agreement, rather than compromise or a trade off, being the ultimate aim of the negotiation. Indeed the discourse shifts around from hard notions of 'contracting' to more consensual notions of learning agreements (Brennan and Little, 1996). Thirdly the starting point for negotiation is to be the normal activities of the individual's work role, although as we have seen above these may need to be related to the identified objectives for the programme, be they organisational, sectorial or for personal development. Fourthly, in their review of WBL programmes Brennan

and Little (1996) refer to the multiple purposes of negotiation including: the identification of 'projects' from work; making learning in the workplace transparent and explicit; and ultimately the customisation of programmes to match individual circumstances. Others point to the role of negotiation in determining what will be accepted as legitimate knowledge in the 'conversion of work into learning' (Solomon and MacIntyre, 2000). Finally, less is perhaps said in the literature about the means through which negotiation will be taken forward. Although some conceptions seem to suggest that negotiation can be understood in terms of the deployment of a set of skills of negotiation which determine learners' success (McCarthy, 1993). However, as some acknowledge the extent to which learners, or indeed staff, who are new to the process will be equipped with these skills may be questionable (Anderson and Boud, 1997; Brennan and Little, 1996).

Usher and Solomon (1999) offer another perspective on the processes of negotiation underlying work-based learning awards. They draw on Foucault, and readings by Rose and du Gay, to develop an understanding of the processes of discipline in contemporary workplaces. They identify the management of subjectivity as a central task of organisations. This 'management' can be thought of as a process of 'teaching' rather than coercion, with the aim of producing active subjects whose objectives become synonymous with those of the organisation. They identify WBL awards as a significant new dimension of those technologies of work by which subjectivity is shaped and experience managed. But they suggest that this is by no means a straightforward process since WBL awards lie at the intersection of different sites of surveillance, the university and the workplace. The tensions inherent in this position are exemplified by the negotiations around the design of individual learning programmes where decisions need to be made about whether or not to include learning not directly related to job performance or learning that criticises workplace practices. For learners who simultaneously desire the benefits of a university degree and advancement in their job it is indeed a tension-filled space where they are being managed by both workplace management and academic systems and requirements. So for Usher and Solomon the process of negotiation is a potentially tension-filled struggle over meanings and interpretations derived from different sites of surveillance which seek to shape learner subjectivity in different ways.

We find this perspective helpful in highlighting the processes of shaping and management which are integral to the negotiation of programmes. In a context where WBL programmes are not unbounded, but bounded and regulated in different ways (Solomon and McIntyre, 2000), negotiation becomes a means of establishing and working these boundaries. We will turn again to the case study and draw on an initial analysis of the implementation guides to suggest a reading of the processes of negotiation within this programme. Here the case study is being deployed to suggest possible avenues for further research in the context of negotiation and it is not presented as representative of any of the forms of WBL alluded to above.

Negotiation as identifying, translating and mapping

'Negotiation is central to the process of establishing learning contracts for WBL projects' (Student guide).

So central is negotiation indeed that the structure of the programme includes a credit-rated planning module through which the skills of negotiation will be delivered and mobilised. Both of these purposes are highlighted in the learning outcomes for this preparatory module whose successful completion depends on the approval of the student's first learning contract. Although negotiation is all important we can detect perhaps some ambiguity or silences on who will be involved in this negotiation. In the guide for students they are the only party who is explicitly identified as a negotiator. While the purpose of the task is to ensure 'a similar understanding between student, tutor and workplace mentor/employer' (Student guide) there is an absence of the concept of a 'three-way negotiation' so prevalent in the literature of WBL. Indeed there is a general ambiguity about the necessity for a mentor at all, with the qualification 'if applicable' accompanying most references to the mentoring role. Taken together with the absence of any specific references to partnership in the guides this reinforces the suggestion that in moving to the implementation stage partnership has retreated in importance and greater emphasis is placed on the role of the student in managing their own learning. One might speculate that this is a pragmatic and reasonable response to the difficulties of establishing partnerships and specifically mentoring agreements with organisations.

The actual processes of negotiation are more explicitly addressed in the guide for tutors. The aim appears to be to encourage students to identify 'appropriate' learning outcomes, assessment methods and criteria, where the appropriateness will be ultimately determined by their ability to get the contract through the Board of Approval. Although it should be noted that all contracts do have to be signed off by employer representatives and tutors prior to submission to this board. Success will stem from a careful process of iteration, which begins with the students identifying 'relevant' learning opportunities in the workplace. Rather than directing students to the strategic objectives of the organisation, the emphasis is placed on the agency of the student in

determining their own starting point for the contract. While the student has a very real space in which to determine the focus of the WBL it is clear that some WBL opportunities are more desirable than others. The purpose of negotiation is to identify 'projects' which are susceptible to project planning and management techniques with examples being provided of the implementation of a new quality system and the evaluation of work processes. This is perhaps suggestive of a conception of WBL as definable, manageable, and ultimately solvable projects. In thus making a 'project' out of work wider issues of learning and knowledge production begin to recede from view.

Negotiation, as portrayed in the tutor guide, then becomes a process of 'translating activities into work-based units of learning' (Tutor guide). This will be achieved through 'mapping the activities to learning outcomes, CAT points and academic levels' (Tutor guide). The key instruments in this mapping appear to be a set of structured 'activities' which student complete prior to and during a tutor-led session; examples of filled in activity proformas; and a set of appendices which contain the models and requirements against which students must check their work. The appendices here could be seen as embodying the academic (and to some extent workplace) systems which contribute to the re-bounding of unruly WBL (Solomon and McIntyre, 2000). They address not only the general learning outcomes for WBL projects which must be satisfied in all contracts, but also the sorts of verbs and generic skills which should be deployed in forming learning outcomes statements. Tutors are advised that students 'will need to be familiar and comfortable' with the guides and indeed it is their ability to use these resources 'fluently' that will ensure their success on the programme. In this context then negotiation may be presented as unproblematic, a process of students identifying, translating and mapping their WBL activities into projects capable of gaining formal approval within the institution. With students, tutors and 'if applicable' mentors working to the same highly visible written guidance there is little need in the documents to contemplate the possibility of not reaching agreement, and indeed no mention is made of the potential for negotiation to fail.

Whilst one could draw from this analysis a picture of constraints and boundaries which exemplify the notions of surveillance and shaping referred to above, this would perhaps fail to acknowledge the productive effects of this approach. As Usher and Solomon point out universities have always been sites of surveillance and have sought to shape the student in ways that have been implicit and uncontested. In beginning the process of making overt the norms and requirements of the academy it could be argued that the case study programme is providing students with the means by which to knowingly work these boundaries or indeed to potentially contest them. Students will have many interests in pursuing a WBL programme, not least among them being the need to conveniently gain access to those HE qualifications which are still powerful as levers in career development. They may prefer the highly structured approach offered by the case study with its visible boundaries to the rather open programmes that were initially developed within WBL with their disorientating emphasis on flexibility (Winter and Maisch, 1996).

But there is a second danger in this initial analysis of the case study. In drawing on the documentation alone the appendices may come to seem more powerful than might be the case if we were to widen our analysis to include the interview data from students, tutors and others. So we need to look at what use is made of the guidance in a context where, as Wolf (1995) points out, specifications can never be complete or unambiguous. In particular we need to explore how tutors and students draw on their own understandings of what is 'appropriate' for WBL in interpreting these guides and what new meanings may emerge from this process.

Shifting purposes shifting discourses

We have attempted to show how in this case study discourses of partnership and flexibility have been mobilised within the institution to secure approval of the programme, and to suggest a need to cede a measure of control of the curriculum through negotiation (with employers and learners). In focusing on negotiation within the implementation documents we have tried to suggest ways in which the implications of partnership and flexibility are then worked in practice. As we have seen earlier notions of partnership with employers and learners have become more ambiguous, with partnership un-named in the implementation documents themselves and responsibility for negotiation with the workplace being taken on by the learner. The potential flexibility which is stressed in the definitive document is then both retained and qualified within the implementation documents. While learners have a very real space to direct the starting point for their learning programme this is married with a 'teaching' process, initiated through the core module, which shapes each stage of the production of the learning agreement. Whilst as indicated above this shaping is necessarily concerned with both workplace and academic requirements a number of factors may be working to strengthen the influence of the later. Firstly the very restricted space that is given to employer involvement in the documents may reflect a difficulty in securing what might be detailed and time consuming contributions from mentors or managers. Secondly the growing importance of regimes of quality assurance and inspection within higher education which seek to specify ever more tightly the content and processes of

all institutional provision, including WBL. In this context innovative programmes of WBL may well feel the need to introduce considerable structure and guidance in order to ensure approval (Brennan and Little, 1996). Flexibility then is potentially constrained by the effects of incorporation into a university qualification. Whilst this shift may be a cause for concern for some, for those learners who are intent on gaining a recognised qualification through a clear and understandable process it may be in some senses be a productive shift.

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WORKING KNOWLEDGE, ECONOMIC METAPHORS AND THE 'COGITO-ECONOMIC' SUBJECT

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With the advent of the post-industrial economy, knowledge has entered the workplace in ways that it never had before. The use of the term 'post-industrialism' itself is suggestive of 'a shift in the structure of industrial capitalism away from mass production and bureaucracy and indicating changing technologies of production, a growth in the service sector and changes in the knowledge requirements of work' (White and Jacques 1995: 48). Further, in post-industrial economies the management of work has also changed through the impact of information technology and the development of alternative organizational forms (Alvesson and Berg 1992). These new organizations in turn need people who do work in correspondingly new and different ways as, in the 'knowledge economy', work has become less physical and more discursive. Gee, Hull and Lankshear (1996:5) aptly put it this way:

Contemporary, globally competitive businesses don't any longer compete on the basis of their products or services *per se*. They compete, rather, on the basis of how much learning and knowledge they can use as leverage in order to expeditiously invent, produce, distribute and market their goods and services, as well as to innovatively vary and customize them.

Against this complex backdrop of such post-industrial work conditions, where might we epistemologically locate the 'working knowledge' that is now thought to be even more important than it was in the past? Further, how might we evaluate the effects of this form of knowledge? The emerging discourse of 'working knowledge' is indicative of a pragmatic turn in our orientation towards what counts as knowledge. Epistemologically, working knowledge is not only *in work*; it is *what works*. The question of what works is invariably a matter of judgement of the effect of knowledge on economic imperatives, with outcomes shaped by criteria such as economic growth, organizational projections and company research into areas such as consumer satisfaction. Working knowledge can, as a consequence, easily become a vehicle for forging particular policies or projects that represent dominant perspectives that are legitimated by commercial considerations. An important part of this legitimisation is the employment of a new language through which the knowledge requirements of the new economy are both articulated and created. This language employs terms such as 'human capital', 'knowledge assets', 'the knowledge economy', 'the information economy', and 'knowledge workers' to explore, define and create new ways of looking at knowledge. Further, the way that knowledge is theorised has become increasingly mediated through economic, commercial and accounting metaphors such as 'the balanced scorecard' and 'intangible assets'. In turn these metaphors construct social understandings of working knowledge and professional practices.

In this paper we will examine some of the ways that such language operate. In so doing, we start with a discussion of how language derived from economic and knowledge based discourses has developed as a dominant way of defining subjectivity in contemporary organizations. From there we go on to draw on the writing of Jacques Derrida to look at the effects and workings of such definitions. The paper closes with a discussion of the implications for subjectivity and knowledge at work. In presenting this discussion, our stated interest is in how the language of commerce has appropriated knowledge by defining it in its own terms. It is our argument that the metaphorical language that has emerged through recent theorisations of 'working' knowledge has generated a discourse that defines people as 'knowledge workers'. By defining people in this way, we can see potential dangers of metaphors becoming reified such that knowledge becomes describable only in economic terms, and people become only describable in 'cogito-economic' terms. This implies that subjects are both 'knowledge workers' (cogito) and 'human resources' (economic). The knowledge management systems of post-industrial organizations are both products and producers of such a discourse.

Metaphors signifying knowledge at work

The very notion of 'working knowledge' is related to a historicisation that claims we have moved from an agrarian to an industrial and then, in the post world war two era, to a knowledge and information society. Hand in hand with the notion of the 'knowledge society' has come a new range of signifiers used to define people. These signifiers rely heavily on terminology related to both economics and knowledge. One of the earliest examples of this was the idea of 'human capital' (Schultz 1961). Schultz's argument was that much of what we call consumption constitutes investment in human capital – the productive capabilities of human beings. These capabilities, in Schultz's human capital perspective, are acquired at a cost and, in turn

command a price in the labour market — the level of which depends on how useful they are in producing goods and services. Since then, there has been a proliferation of terms expanding on this basic premise to describe people in economic and/or knowledge terms. Such terms include 'human resource development' (HRD) and the related practices of 'Human Resource Management' (HRM), 'knowledge workers', 'intellectual capital', 'knowledge capital' and more recently the managerial jargon of 'employees are our greatest asset'.

One common characteristic of this terminology is the use of economic metaphors such as capital, resources and assets to describe people at work. We believe that attention to the development of such metaphors is important as they provide valuable insights into how organizational life. Palmer and Dunford (1996) also point out that some metaphors may be so embedded in particular contexts that they come to constitute an 'authentic' discourse that permits no flexibility or change in ways of looking at organizations and the people in them. Here attempts at introducing new ideas or metaphors might find it hard not to be 'colonised' by existing dominant organizational metaphors. The notion of 'human resources' serves as a good example of part of such an 'authentic discourse' — one that has 'graduated' to now being a dead metaphor, that is, a metaphor whose metaphoricality is forgotten.

The growth of the use of the term 'human resources' in popular management books, academic texts, management education subjects and the naming of functional departments in organizations has come to see the 'human resource' as being a dominant term used to refer to people in organizations. The use of the term 'resource' to describe people here loses its metaphoric character and is readily seen as a literal term to describe people. The word 'resource', however, has a genealogy that relates back to the description of economic and financial phenomena — where a resource refers to a means of producing wealth or property that can be converted into money. Here the use of the word 'resource' becomes a metaphor to describe people, but it is a metaphor borrowed from the organizational domain in which people are defined in terms of managerial prerogatives. Much of the terminology that has emerged to define people in the post-industrial context uses this textual practice. Intellectual capital, knowledge capital and human capital are other prime illustrations; each working to define *people* in terms of their central concept: *capital* itself. Capital is the wealth that is employed in order to produce goods and services, and people become linguistically subsumed as just another form of capital. The metaphor translates 'being' through the terminology of commerce — thus the cogito-economic subject. Cooper (1992: 267) links this *translation* to 'technologies of representation' which serve to:

Convert the inaccessible, unknown and private into the accessible, known and public; they convert the deferred and faraway into the instantaneous and immediate; and their portability and mobility makes them easy to manipulate and control.

In terms of organizations, Deetz (1995) has suggested that the development of industrialisation replaced a set of representations based on 'intrinsic' values with one based on a system of exchange values represented by money. It is here that 'labour became articulated as a "cost" to the organization' (p. 228). Deetz goes on to argue that for the modern corporation, the reason for working is to make money and any alternative motives are only considered in terms of their effect on commitment, productivity and sales as translated in monetary terms. This is a privileging of a monetary code as a representation practice in which everything is economic; everything including people. Such privileging serves to enact a form of control through which economic subjects emerge out of the very interests that seek to define people in those (economic) terms.

In contemporary organization and management studies literature, definitions of people in economic terms has taken further turn to that described by Deetz. The use of language such as 'working knowledge', 'intellectual capital', 'knowledge assets' and so forth takes the use of economic metaphor and adds to it another powerful linguistic substitution. The first turn is to use economic metaphor to describe people; the second turn is to introduce the synecdoche of knowledge and intellect. Synecdoche works in this way to use a part of something to describe the whole — it is people's intellectual capacity and their knowledge that is used to describe their 'whole'. The result is the creation of a disembodied subjectivity that defines people economically and focuses their 'value' in terms of their intellectual capacity — thus cogito-economic subjects. Our concern in making this observation is that the only legitimate knowledge that is being constructed in this context is that which is deemed economically viable. It follows that the only legitimate subjectivity is one where people are defined in these terms.

Enter Jacques

So far we have argued that the notion of working knowledge conflates subjectivity with knowledge and commercial interests through the use of figurative language. To further explore 'working knowledge' it is

useful to examine how such language operates. To do this, we use Derrida's (1982) discussion of the use of metaphor in philosophy to review the use of cogito-economic terminology to define selves.

Usure

Derrida (1982) uses the term 'usure' to examine the use of metaphor in philosophy. He uses this term in relation to its double meaning in the French language – usure as *usury* (ie the acquisition of too much interest) and usury as *using up* or the deterioration through usage. The usure of metaphor, therefore, is simultaneously the rubbing away of the original and the creation of 'linguistic surplus value'. Building on our earlier discussion, the metaphor of the 'human resource' can be used to illustrate this. In the metaphorical term 'resource' there is a suggestion that human resources were something else prior to the 'resource' metaphor being applied and becoming commonplace. It implies an original, concrete figure of a pre-economic subject, equivalent to what might have been considered the literal meaning of 'being human'. The first move of the usure of metaphor, then, is to wear out an 'original meaning'; for the metaphor to no longer be noticed and to be taken for the 'proper' meaning. The metaphor is used, 'human resources' is worn out as its apparent metaphoricity is suspended. People are no longer seen AS resources but ARE resources.

At the same time as the wearing out occurs, the metaphor is also producing a surplus value – a 'tropic supplementarity' (Derrida 1982: 210) ... [describing this as]:

The supplementary product of a capital, the exchange which far from losing the original investment would fructify its initial wealth, would increase its return in the form of revenue, additional interest, linguistic surplus value. (Derrida *ibid*)

Metaphor creates surplus as one signifier is replaced by another – in this case through the metaphor of person taking on the signifier of 'resource'. As well as what a person might have been before, now there is more; now a person is also a resource. The adoption of a new use of language to describe people is therefore not innocent. It is not just about using different words to signify the same thing. Rather, translating concepts from one signifier to another (in our illustration from 'person' to 'resource') cannot be pure, transparent or unequivocal. Paraphrasing Derrida (1996), the meaning of a concept is not separable from the process of passage or from the signifying operation. The translation to the new signifier is generative – it is a supplement that does not just substitute for a signified or a previous signifier, but rather it emerges as something new. Describing people in cogito-economic terms therefore does not reflect the 'reality' of what it means to be a person, but rather it generates and potentially attempts to finalise that reality in a particular way.

We are not suggesting that the metaphor is 'concrete' such that it can be traced to its origins, for instance, to get at the true meaning of being a 'person'. Our point, rather, is that the economic metaphor does work by producing and supplementing. But it does not replace a pre-metaphoric reality where people (subjects) were literal rather than figurative

Scraped again

As we discussed earlier, post-industrial conditions and the so called 'information economy' have further developed the economic metaphor by adding to it a knowledge element. This is a double substitution where an increasingly dominant way of looking at people is as cogito-economic subjects. The creation of the cogito-economic subject is the result of metaphor, but it is a metaphor without literal origin – a subject that cannot transcend its signifiers. The debate then turns not to a longing for authentic experience, but to a discussion of the effects of the usure.

This effect is what Derrida describes (metaphorically) as a 'palimpsest'. Palimpsest comes from the Greek meaning 'scraped again', and refers to a parchment, papyrus or other writing material where the original text has been removed so that it can be reused. Before paper became an easily available and inexpensive commodity, this common practice involved old surfaces being scrubbed so that they could be written on multiple times (Murfin and Ray 1998). Despite this, even though the original text was scraped off, the older text is still recoverable by the use of means such as ultraviolet light. To consider a word a palimpsest draws attention to the multiple levels of signification that exist in that word. Despite the 'scrubbing of meaning' and its metaphorical replacement, a trace of what has been replaced always exists, 'inscribed in white ink'. This is not to suggest that the meaning that has been replaced was in some way 'original' or non-metaphorical. Rather, one sign has been used to designate another in a chain of signification where new signs work to erode, rub out and use up the signs that they replace.

Working knowledge and the cogito-economic subject

Our argument thus far is that contemporary times are seeing the cogito-economic subject emerging in a discourse that is shaping the 'preferred self' through the palimpsest of organizational language. Indeed, processes in and after industrialism have generated dominant discourses on selfhood that both 'shape the character of the modern self throughout modern industrialism and delimit the context of our thinking on self' (Casey 1995 p. 50). It is here that discursive processes of work shape selves through a 'hidden curriculum' that produces 'acculturated employees' (p. 78). This type of economic-self is constructed as desirable in the contemporary work order. Such a self is defined not as an autonomous object, but rather as a subject defined positionally and relationally. The question then changes from:

Who defines the terms of the organization to who is defined by them and how these definitions determine organizational identity? (Baack and Prasch 1997: 136).

The cogito-economic self then exists in a discourse that works to define people in such terms and simultaneously rub-out other forms of self, supplementing them with terms that resonate with organizational imperatives. In this way, a discourse becomes powerful. When its metaphor is used up, people must contend with the emergent (powerful) discourse in terms of how they define themselves and are defined by others.

Seeing people as cogito-economic selves is related to the growth in post-industrial work conditions that affect people at work in a number of ways that differ from industrial work. 'First of all, the primary impact is no longer upon the body, and the primary requirement is no longer physical prowess and endurance' (Casey 1995: 86). In post-industrial economies, the management of work has also changed through the impact of information technology and the development of alternative organizational forms. What was important to organizations in the industrial past was the harnessing of people's bodies. The need to control the people who were the physical parts of the machinery of production was epitomised in the automated production lines of the Model T Ford and subsequent 'Fordist' workplaces (Rhodes and Garrick 2000: 273). As we have argued elsewhere (ibid):

For many contemporary workplaces nothing of an 'object' nature is produced and people's capability and willingness to engage in physical activity appears to be less important. This 'information economy' that has emerged through post-industrialisation is one where people spend their time at work using computers, reading, writing, talking and listening. The predominant way that work is mediated is textual, not physical. In this milieu there is a reduced need to control the bodies of workers and an increased need to manage the way that people produce and consume texts.

It is the cogito-economic subject who can produce and consume such texts for the 'good' of the organization. As Garrick and Usher (2000: 2) argue, the knowledge and identity of people at work is constructed in ways that seek to align individual aspirations with organizational goals and where 'knowledge' is commodified as a factor of production. Such commodification sees workplaces as 'sites not only of new forms of organizing production and work management, but also sites for shaping the subjectivity of employees'.

By drawing on Derrida, we are forging an argument that the emergence of post-industrial economic discourse has metaphorically generated a 'cogito-economic' subject. New selves for new times are being crafted to meet the presumed requirements of informed, textual work. The metaphoric construction of this self is one whereby:

The history of a metaphor appears essentially not as a displacement with breaks, as reinscription in a heterogeneous system, mutations, separations without origin, but rather as a progressive erosion, a regular semantic loss, an uninterrupted exhausting of the primitive meaning: an empirical abstraction without extraction from its own native soil (Derrida 1982: 215).

The emergence of the cogito-economic subject is one whose metaphorical creation becomes forgotten after long usage – the palimpsest is such that what came before is no longer easily visible. The metaphor by then has lost its metaphoricity and its status as an illusion becomes no longer recognisable. 'Truth' is achieved when metaphoricity is denied. To be a 'real' cogito-economic subject then, one must be able to work towards improving performativity (Lyotard 1984) — to contribute knowledge in a resourceful way (that is with 'the best possible input/output equation' (p. 48). Here the knowledgeable-self is prized to the extent that it can generate efficiency as measured by financial and other numerical indicators.

The increasing dominance of cogito-economic metaphors to describe people can impose a powerful monologue on what it means to 'be' in the postmodern world. It is a monologue spoken by a 'managerial voice' that defines people in terms that subjugate them to narrowly conceived organizational imperatives through its own representational practices. Exploring the metaphorical construction of preferred organizational selves is therefore important in interrupting the power that works to fix particular representations of what it means to *be* at work. People do not have to be defined solely in cogito-economic terms and *questioning the metaphor* is our way of highlighting potential for differences and the importance of stimulating dialogue across such differences. While discourses work towards domination, in terms of privileging particular ways of looking at the world or ways of defining what it means to be a 'self', there is no reason to believe that such discourses are inevitable or not subject to change. As Clegg and Hardy (1996: 685) put it, our attention needs to be drawn to:

The need to understand identity as a complex, multifaceted, and transient construct; to appreciate that individuals have multiple identities; that identities intersect to create an amalgamated identity; that identities are socially, historically, culturally and organizationally constructed, and subject to contradictions, revisions, and change.

Here selfhood is seen as the result of a dialogue between different discourses of the self but where some discourses work to establish a loud monologue that drown out other possibilities. Possible voices in this dialogue are many and knowledge (and its management), learning and education can contribute to greater freedoms and choice in their working lives, while taking care that people are not restrained and restricted by new forms of oppression. People in contemporary work (including ourselves) sometimes need to be reminded that although it might not always seem the case, there has to be more to life than being a cogito-economic subject. The immediate challenge, as we see it, is to interrupt the monologue to invigorate possibilities for dialogue and choice.

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TECHNICAL AND VOCATIONAL EDUCATION IN CHINA: HISTORY, EDUCATIONAL SYSTEM AND ACHIEVEMENTS, OPPORTUNITIES AND CHALLENGES

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1. A brief history of Vocational Education in China

As the UNESCO *Recommendations* (1999, Seoul) recommends "All nations require a coherent education policy and coordinated education systems within which technical and vocational education (TVE) must be a fundamental part", the history of vocational education in China may be traced back more than 130 years ago in the 1860's. The main content of vocational education at that time, i.e. the late Qing Dynasty, was to study the advanced technology from the western countries and train manpower with practical skills only.

The *Schooling System of 1902* laid down a set of systematic regulations for vocational education while the Chinese Vocational Education Society which was established in 1917 and led by Mr. Huang Yanpei, set the precedence of joint provision of vocational education by the educational and industrial sectors in China. However, the slow and backward national economy, industry, agriculture and commerce in the old China before 1949 hampered the development of vocational education. In the old days, the whole nation had only 561 secondary technical schools with an enrollment of 77 000 students and 3 trade schools for training workers with an enrollment of 2 700 students. The total enrollment of the secondary vocational schools in old China represented only 4.2% of the total student population in the secondary schools.

The founding of the People's Republic of China (P. R. C.) in 1949 marked a milestone in the development of vocational education in new China. In the 1950's, vocational education in China had experienced some prosperity with thousands of vocational schools setting up. Vocational Schools here refer to the trade schools, technical schools and agricultural schools at primary and secondary level and other vocational education in various forms.

As the prosperity of the national economy went on in the 1960's, manpower training and skill learning needed by all sectors of the society were accelerated, and the vocational education run a rapid development. But due to the outbreak of the so-called Cultural Revolution in the second half of the 1960's, vocational education and other forms of education were deadly stopped. Vocational education in China has resumed its status and has been injected with tremendous vitality for development since China entered a new historical era of reform and opening to the outside world in 1978.

Recognizing the importance of vocational education in elevating the nation's integrated strength, the Central Committee of the Communist Party, the State Council of P. R. C. and the Ministry of Education (MoE) of P. R. C. have formulated and approved many policies and regulations on technical and vocational education. And many Chinese high rank officials have also made various important remarks with the purpose of promoting vocational education. However, what is the most important matter in developing vocational education in China is the adoption of the first *Vocational Education Law of the People's Republic of China* in 1996, which provides legal protection for the development and perfection of vocational education.

2. Vocational Education System in China

The compulsory schooling is 9 years from the age of 6 to 14, while the vocational education system in China is divided into three levels: junior and senior high schooling and higher (tertiary) education.

Vocational education at the junior high schools, broadly located in the vast rural areas where the economy is less developed, aims at training the primary school graduates who will become relatively skilled peasants in the countryside and workers at townships. The junior high vocational schooling is a part of the 9-year compulsory education, lasting 3 or 4 years depending on different zones, and has being developed greatly in view of the student body and the number of schools (see table 1).

Table 1 Development of Junior High Vocational Education, 1990-99

(In 10 thousand persons)

Year	No. of Schools	No. of Students Admitted	Enrollment	No. of Graduates	No. of Full-time Teachers
1990	1 509	13.36	47.88	13.91	2.87
1991	1 556	23.82	52.33	13.68	3.01
1992	1 593	26.68	56.38	14.10	3.20
1993	1 582	26.65	56.24	14.52	3.31
1994	1 538	28.51	63.05	13.80	3.54
1995	1 535	28.84	69.69	16.96	3.72
1996	1 534	30.68	77.52	18.76	3.92
1997	1 469	30.88	80.89	20.93	4.01
1998	1 472	34.89	86.70	22.92	3.96
1999*	1 319	33.76	90.08	24.14	3.94

Source: *Vocational Education in China*, prepared by the Department of International Cooperation & Exchanges, MoE, P. R. C.;

*: *Essential Statistics of Education in China 1999* prepared by the Department of Development & Planning, MoE, P. R. C.

Note: All data in table 1 include vocational education for adult.

Vocational education at the senior high school, corresponding to level 3 of ISCED, 1997, is a part of the post-compulsory education and consists of the specialized secondary schools (SSSs), the secondary trade schools and senior high vocational schools (SHVS) which are the mainstay of China's technical and vocational education. The term of specialized secondary schools is the direct translation from Chinese, referring certain professional and/or technical and vocational education at the secondary level.

SSSs consists mainly of the secondary technical school and the secondary school for teacher education, both of which enroll junior high school graduates with 3 or 4 years of schooling. But certain major subjects at SSSs can only admit senior high school graduates with a 2-year schooling. The general purpose of SSSs is to train professionals and skilled technicians for the forefront of production. And all the students are required to master the basic knowledge, theory and skills of their majors in addition to the basic cultural knowledge set for the regular (general) senior high school graduates.

The secondary trade school as its name suggests, trains students with skills who will be future workers and is open to junior high school graduates with 3 years of schooling. Graduates from this kind of school are quite capable of practicing and operating in production activities.

Developed on the basis of the structure reform of the secondary education and directly coming from the reorganization of regular senior high schools, the senior high vocational school admits junior high vocational and regular junior high school graduates and its schooling is 3 years. The main task of SHVS is to train the practical-skill-oriented talents with comprehensive professional abilities and all-round qualities directly engaged in the forefront of producing, service, technology and management. Accordingly, the specialties offered by SHVS are mainly related to the tertiary industry.

Recent development of senior high vocational education is undergoing a process of adjustment, rectification and reform. The state policy of developing TVE with a greater force remains unchanged [2] although the development of TVE is facing some difficulties and challenges. For example, the total number of students participating in technical and vocational education at the secondary level underwent some reduction in 1999 compared with 1998 (see table 2). The secondary vocational schooling here includes vocational education carried out at SHVSs, specialized secondary schools, the secondary trade schools and the specialized secondary schools for adults. In spite of the decreased student population of vocational education at the secondary education but the proportion of students admitted to and enrollment of the secondary vocational education in 1999 occupied respectively 52.28% and 56.47% of that of the total secondary education [3].

Table 2 Development of TVE at the Secondary Level, 1998-99

(In 10 thousand persons)

1998	No. of Schools	No. of Students Admitted	Enrollment	No. of Graduates	No. of Full-time Teachers
Specialized secondary schools	4 109 (3 962)	166.83 (163.37)	498.08 (515.50)	129.31 (140.15)	27.85 (27.37)
Of which:	3 234	134.89	405.97	98.37	21.50
Technical schools	(3 147)	(134.25)	(424.98)	(109.25)	(21.18)
Teacher education	875 (815)	31.94 (29.12)	92.11 (90.52)	30.58 (30.90)	6.35 (6.19)
Trade schools	4 362 (4 098)	59.40 (51.55)	181.30 (156.05)	68.20 (66.25)	14.50 (15.03)
SHVSs	8 602 (8 317)	182.68 (160.38)	454.92 (443.84)	139.85 (143.69)	29.61 (29.61)

Source: *Educational Statistics Yearbook of China 1998*; and *Essential Statistics of Education in China 1999*, prepared by the Department of Development & Planning, MoE, P. R. C.

Note: Data in brackets refer to the year of 1999. And all data in this table include vocational education for adult.

With the schooling lasting 2 or 3 years, tertiary vocational education in China admits graduates from regular senior high schools and senior high vocational schools. In recent years, the proportion of SHVS graduates admitted to the tertiary vocational education has been increased, establishing the proper link between the secondary and tertiary vocational education.

At present, institutions providing technical and vocational education at tertiary level in China are classified into five categories. They are the technical institutes, technical colleges which are the main body for tertiary technical and vocational education, 5-year-tertiary vocational classes run by specialized secondary schools other than SHVS, vocational education provided by some regular and/or higher education institutions, and the institutions reorganized from regular specialized secondary schools.

Tertiary vocational education in China at present is defined something similar to the U.S. community college education and the post secondary non-tertiary education, i.e. level 4 of ISCED 1997. But graduates of this kind are only granted diploma without any degrees; and this may hinder the further development of TVE in China. However, due to the rapid growth of school-aged population and the guidance of government policy, the development of tertiary vocational education is still going fast, and this can be seen from the development of technical colleges alone (see table 3).

Table 3 Development of Technical College, 1990-99

(In 10 thousand persons)

Year	No. of Colleges	No. of Students Admitted	Enrollment	No. of Graduates
1990	114	24 059	72 449	26 425
1991	114	22 930	64 359	24 943
1992	85	27 053	66 219	20 315
1993	83	35 274	79 909	19 647
1994	87	35 518	93 939	21 456
1995	86	37 050	98 300	28 863
1996	82	38 596	98 831	31 766
1997	80	44 665	112 092	29 818
1998	101	62 751	148 561	35 480
1999*	161	123 378	234 244	40 140

Source and note: The same as table 1 of this paper.

3. Rapid development of Vocational Education in rural areas

China is the largest developing country in the world with one quarter of the world population, and 80% of the country's population and that of the student live in the countryside [4]. Sound and smooth development of TVE in China is an effective tool to realize the objectives of a culture of peace, building prosperous communities in the twenty first century, social cohesion and stability, and environmentally sound sustainable development. And the healthy development of TVE is the prerequisite to develop the West China where needs millions upon millions of well trained workers, technicians and engineers.

Since the 1980's, significant progress has been made in vocational education in rural areas of China with the student body enlarged and the teaching quality greatly improved. Rural vocational education is mainly conducted by the specialized secondary schools of agriculture and forestry, rural vocational high schools and the cultural & technical schools for peasants. From 1984-97, the number of specialized secondary schools of agriculture and forestry increased from 406 to 420 with the enrollment increasing from 102 400 to 516 000 students. During the same period, the number of rural vocational high schools increased from 4 217 to 4 900 with the enrollment increasing from 895 100 to 2 194 700 students. Since 1984, these schools have produced over 7 million secondary vocational school graduates for the whole society. Most of these graduates have taken the lead in "Making a Fortune by Science and Technology" in the countryside, contributing immensely to the economic growth in rural areas of China.

The objective of the reform of rural vocational education is the implementation of the "Liaoyuan Program" which emphasizes the connection between economic development and reform of education & teaching; and emphasizes the integration of agriculture, science, technology and education with the overall planning of basic education, vocational education and adult education.

4. International cooperation and exchanges on Vocational Education

Globalization has become the common trend for the reform and development of modern education in the world. Along with the reform and opening to the outside world, China has been actively engaged in the international cooperation and exchanges in the field of vocational education. During more twenty years, the Government of China has sent many delegations to over twenty countries and regions where TVE is well developed and the delegates showed their unique characteristics to learn successful foreign experience. At the same time, China has received many foreign vocational education delegations, invited foreign experts to give lectures in China, and jointly provided education with foreign vocational education institutions to promote the development of Chinese vocational education. China has also made more contacts with the UNESCO, UNDP, WLO, UNPF, APEC and other international organizations while the bilateral cooperation and exchanges in education between China and other countries have been increasingly expanded.

In order to improve the all-round qualities of vocational educational teachers, since 1987 China has sent thousands of administrators and teachers who teach specialized courses to America, the United Kingdom, Germany, Italy, Australia, Canada and Japan for further studies. And this has turned out good results.

In 1990, the Chinese Government signed the *AGREEMENT on the LOAN for VOCATIONAL EDUCATION PROJECT in CHINA* with the World Bank, which consisted many sub-projects and began further to develop vocational education in the whole country. At present, the first session projects have been finished while the second session projects are already on the smooth way. The two session-projects altogether will use \$80 million loan from the World Bank and \$100 million matching money from the Chinese Government. The implementation of the whole projects will significantly improve the conditions of teacher training bases for vocational education and advance the teaching qualities, and will make great contributions to many subjects in the fields of vocational studies. In 1990, the German Government agreed to provide the fund to set up the Chinese Central Research Institute of Vocational Education in Beijing, and two local research institutes respectively in Shanghai and Liaoning Province, China.

Since early 1980's, China and German have jointly set up over 30 cooperative projects in the field of vocational education and carried out the pilot reform, learning from the German Dual-tract System. This cooperation is nice and both sides benefit a lot from each other.

In cooperation with Canada and Australia, the teaching and training models of foreign were introduced to China. The experience of TAFE is of great importance.

In addition, China undertook the International Seminar of TVE organized by UNESCO in 1993 and hosted the International Seminar on Rural Vocational Education in 1997 with representatives from foreign countries and international organizations such as the World Bank and the World Labor Organization. China is

determined to further opening to the outside world to draw all useful experience from other countries and regions for its educational development and TVE in particular.

5. Some recommendations

From the view of a researcher, I would like to make some recommendations concerning TVE in China and in the world, and end this paper.

- (1) The national policy on higher (tertiary) vocational education is the key to further and smooth development of TVE. The higher vocational education (HVE) in China should be arranged at the university level and graduate level and can not only be defined as non-university education. That is to say that HVE graduates should be granted bachelor, master and doctor degrees when they have reached the requirements set in vocational education. (It is said that a pilot 100 students were admitted to a university for bachelor studies in vocational education in Fall, 2000.) And students both in higher vocational education and in regular higher education should be provided continuous entry, exit and re-entry points with their credits earned recognized, and the students in higher vocational education track should be allowed to transfer to the academic track and vice versa. This is a way to clear the disparities between HVE and regular higher education and promote parity of esteem between the two. Otherwise HVE development will be further hindered and the negative profile is already appeared. For example, the only normal college for TVE in Henan province, China, planned at first to admit 540 students in Autumn 2000, but only 42 students were willing to be admitted [6].
- (2) The reason for short of students in vocational education both at the secondary and tertiary level in recent one or two years is that the graduates of vocational education were hard to find jobs in the labor market. And even if he and /or she found a job, he and /or she were paid lower than their peers in the academic studies. And influenced by the traditional but old point of view not a few people regard vocational and technical education nothing but second. This reminds us that the status and prestige of TVE must be enhanced in the eyes of the community and the media. And molds of good practice in TVE at home and abroad must be publicized and disseminated, and the competitive abilities and practical skills of vocational graduates at all levels should greatly be enhanced.
- (3) The input for TVE from various governments, ministries and enterprises is far from demand and tuition and other fees paid by students in higher vocational education are higher than those in general education. In this regard, policy makers at various levels should change their mind and thinking and recognize that TVE is an investment, not a cost, with significant returns including the well-being of workers, enhanced productivity and international competitiveness. Decision making in educational policy can not be mixed up with any wrong ideas, for any wrong decision will result in disasters for our next generations. The development of Western China provides both great opportunities and challenges for the development of TVE in China and also provides great opportunities for our foreign friends because it needs a great number of trained people and opens to the outside world. But successful and smooth development of TVE is the pre-requisitions for developing China's west. And nobody can and will be willing to sit ideal.

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PREPARING UNDEREDUCATED AND UNEMPLOYED PARENTS FOR THE WORKPLACE THROUGH EFFECTIVE FAMILY LITERACY PROGRAMS IN TEXAS

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Introduction

Nearly one in three Americans is functionally illiterate! Further statistics from the National Adult Literacy Survey (NALS) suggest that millions of them cannot read or write in English and millions more have only minimum ability to do so (Kirsch, et al., 1992). Those statistics are supported by information from a study of skills needed by adults in the 21st Century conducted by the United States Department of Commerce (Stuart, 1999). "More than 90 million Americans have low levels of literacy. These individuals are not well-equipped to meet the challenges of the new economy and compete with workers of nations with higher literacy rates than the United States" (p. 7).

In 1994, the United States had a greater concentration of adults who scored at the lowest levels across prose, document, and quantitative literacy than many other countries studied (National Center for Educational Statistics, 1997). This situation has a very negative effect upon the lives of those adults' families. While lack of education and literacy skills is not the only reason for poverty, poor health, unemployment, and social alienation, there is some evidence of a relationship among all of them. "Illiteracy leads to poor lifestyle practices, stress, unhealthy living and working conditions, and the inappropriate use of medical and health services" (Rootman, 1991, p. 65). In addition, "43% of people with the lowest literacy skills live in poverty, 17% receive food stamps, and 70% have no job or a part-time job" (Fast Facts, 2000, p.1).

Describing literacy in the United States

Adult literacy

In the United States, the definition of literacy has changed over the years. In the early part of the 20th Century, the ability to read and write at a minimum level determined the extent of one's literacy. By the middle of the century, the number of school years completed became the measure of literacy accepted by most people. The higher the number of grades completed, the higher was a person's level of literacy. By the 1970's "functional literacy" was preferred by many. According to Venezky, Wagner, and Ciliberti (1990), this term represents a further attempt to make explicit a word's definition. "If literacy is an ability that is demonstrated in such contexts as work, voting, and home management, then the measurement of literacy rates for any population is most logically done at the age levels where these activities have meaning for that population (p. 6). In the 1980's and 1990's, as accountability grew in importance, testing, i.e., reading tests, language tests, and tests of General Educational Development (GED), became the accepted method of determining the extent of one's literacy skills (Askov, 1991, Chisman, 1990, and Hunter and Harman, 1979).

In 1991, the U.S. Congress passed the National Literacy Act in which literacy was defined as "an individual's ability to read, write, and speak English, compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one's goals, and develop one's knowledge and potential" (Fast Facts, 2000, p. 1).

Family literacy

Educators have long realized the importance of involving the family in the educational process, but only in recent years has a concentrated effort been implemented at the national and state levels to accomplish that endeavor. For example, although the Head Start programs have been functioning for many years, parent education has only been required in those programs since 1996. Because a variety of organizations have implemented family literacy programs with multiple purposes, defining or describing just what family literacy is has become a challenge.

Nickse (1989) has described family literacy as a situation where a parent and a child are learning together as a unit, enhancing both lives. She also notes that this approach to education began in the early 1980's. Later, in 1986, Kentucky became the first state in the U.S. to initiate a family literacy program when the Parent and Child Education (PACE) legislation was passed. This legislation provided funds for the establishment of family literacy programs and it was the first state-wide effort with a focus on educating parents and children together (First Teachers, 1989). This initial effort was the basis for the

establishment of the National Center for Family Literacy (NCFL) in 1989 in Louisville, Kentucky through financial support from the William R. Kenan, Jr., Charitable Trust.

At the national level, the U. S. Congress enacted legislation authorizing "Even Start" family literacy programs under the Elementary and Secondary Education Act in 1988. This legislation continued in 1994 as a part of the Improving America's Schools Act, Title I, Part B. Even Start legislation has three required, interrelated goals: (1) to help parents become full partners in the education of their children; (2) to assist children in reaching their full potential as learners; and (3) to provide literacy training for parents of the children in the program. These programs, initially administered by the U.S. Department of Education, became administered by the individual states when the federal appropriation reached 50 million dollars in 1992 (St. Pierre, et al., 1995). In the year, 2000, there were over 800 Even Start programs in the United States.

Several definitions and descriptions of family literacy exist. Some programs have only three components and others have more. However, most of those authors cited above as well as others seem to agree that the key to success in family literacy is to have both the parent and the child actively involved in the learning process. This is supported in a publication by the Barbara Bush Foundation that indicates that a parent is, indeed, a child's first teacher and that a child will learn from a parent for a longer period of time than any other person (First Teachers, 1989). In general, family literacy programs also involve a number of collaborative organizations in the community that provide a variety of support services, enhancing the positive outcomes from the program.

"Even start" family literacy programs

In the past ten years, family literacy has become a program that is truly "making a difference" in the lives of thousands of families in the United States. With millions of dollars allocated annually from the federal government through "Even Start" family literacy legislation (\$150,000,000. in 2000), local public and private agencies have implemented programs across the country. Although several models of family literacy have been developed, Even Start programs usually contain at least four common components - early childhood education (ECE), adult education, parent education, and parent-and-child-together (PACT) time. In addition, every family receives at least one home visit per month where the parent educator demonstrates techniques of how the parent can teach the child with materials usually found in the home or with those brought by the home educator. The home educator also observes while the parent reads to the child and often leaves a book for the parent to read to the child during the next few days. Books can be exchanged at any time the parent desires to do so.

Those four components are integrated into the daily schedule that often follows the routine found below:

- a. Families come to school on a school bus, city bus, or by private automobile;
- b. Parents and children have breakfast together;
- c. Parents attend adult education classes while their children choose from a variety of learning centers in the early childhood classroom;
- d. After about three hours, parents and children come together for PACT where parents learn how to teach their children and work with them at home;
- e. Families have lunch together;
- f. After lunch, the children rest while their parents attend parent education classes;
- g. In some programs, parents volunteer in the school while the children play;
- h. Families return home.

Programs are funded for four years, assuming satisfactory annual performance. Local programs must provide "matching funds" beginning with 10% the first year and increasing 10% each year thereafter through the fourth year to a total of 40% matching funds throughout the fourth year. A second four-year cycle of funding is possible at a maximum level of 50% of the original federal funding, plus at least 50% matching funds from the local agency. That possibility depends upon the accomplishments of the program during the first cycle, plus the quality of the proposal for a second cycle of funding. However, the matching fund level remains at 50% for the entire "second" four years. If programs are funded for a third four-year cycle, the local agency receives 35% of the original funding level while the local match becomes 65%. Thus, the federal government hopes that since the local educational entity is providing at least 40, 50, or 65% of the funding (depending upon which cycle the program is in), the program will continue at "some level" after the federal funds expire. Most programs are housed in public schools, but some are found in regional educational service centers, community colleges, and community private, non-profit organizations.

Evaluation research in family literacy

General family literacy research

Although family literacy (or intergenerational literacy) programs have been functioning since the early 1980's in the United States, until the past five years, there has been a paucity of research data to substantiate positive outcomes from those programs. One of the earlier studies was that of Seaman (1992) who combined aspects of both descriptive and qualitative research procedures in determining what effects the Kenan model of family literacy was having on participants in programs using that model. Only short-term effects were documented due to the somewhat limited time those programs had been functioning. Other studies also began to show limited effects in regard to factors associated with family literacy programs. Those included the transfer of knowledge about print from parent to child and the participation by families in the culture of literacy (Snow and Tabors, 1996); qualitative research in developing longitudinal studies in family literacy (Hayes, 1996); how reading to children can enhance positive attitudes toward literacy at an early age (Rosow, 1995); and issues in assessing literacy skills (Szudy and Arroyo, 1994). However, the first comprehensive report of findings from family literacy programs was by Hayes (1997) who analyzed data from families who had exited the programs and had been away for up to six years. His findings about parents who had left the programs included:

1. A high percentage achieve high school equivalency after leaving;
2. An important percentage obtain and retain employment;
3. They continue to enroll in education and training programs; and
4. They become more self-sufficient and reduce their dependence upon public assistance.

Hayes's research reflected the efforts of family literacy programs in preparing parents for the workplace. This concern is also reflected in much of the vocational education research in the U.S. as indicated by Wonacott (2000) in his analysis of research trends and issues in that professional field.

The national Even Start legislation (P.L. 103-382, Sec. 1205) requires each local program to provide for an independent evaluation. However, this creates two problems. First, little, if any, guidance is available for local evaluators to design and implement their evaluation activities (St. Pierre and Creps, 2000). Therefore, most evaluators create their own design or approach resulting in little coordination about the kinds of information and data being acquired. Second, many Even Start administrators have never coordinated a program with an external evaluator and they are unclear about how to work with one. In the experiences of the writers of this paper, sometimes a program coordinator will not even contact anyone about evaluating the program until the year is about finished and then a telephone call is made in desperation for someone to come and develop an evaluation plan.

Potential evaluators should be consulted by the local staff who are preparing a grant proposal before the proposal is submitted and asked for input into the section about evaluation. However, it is also not unusual for a potential evaluator to be contacted after the program has been funded. Therefore, evaluation appears not to be a high priority with many proposal writers when they prepare grant proposals for external funding for Even Start programs.

As with most educational programs, local evaluations are implemented for a variety of purposes (St. Pierre and Creps, 2000). For some, the emphasis is upon information for program improvement, either immediately or during the following year. Others want to acquire outcome data to satisfy their funding agencies for continued funding. In addition, a few want to impress local school administrators who provide the matching resources and whose support will become critical when external funding expires. A few want to use the data primarily to evaluate staff, whereas most hire an evaluator only because the law requires it. Although some local coordinators admit they would probably not spend money on an evaluator without the law requirement, they also admit that they recognize the importance of evaluation data.

Workforce literacy information

While most program administrators focus almost totally upon educational successes (probably because that is what the legislation itself emphasizes), some local evaluators do acquire information pertaining to workplace activities and issues faced by family literacy parents. However, this is a decision by each independent evaluator since there are no federal or state guidelines about acquiring workforce data. Chisman (1990) advocated the importance of workplace literacy for families and discussed the job-skills gap and its implications for the future. The National Center for Family Literacy recognizes the need for workplace information and offers training to:

- a. Recognize the "value added" that family literacy brings to the workplace;

- b. Compare local program designs to job opportunities and needs; and
- c. Develop partnerships with local businesses to foster job opportunities (Momentum, June, 2000).

Chisman's concern about the relationship between the workplace and literacy programs of all kinds has its supporters in the literature. For example, there is a strong association between educational achievement and income-levels. In 1996, among individuals 25-to-34-years of age, those who had dropped out of school were more than three times likely to be receiving public assistance than high school graduates (The Condition of Education, 1998). In addition, people with higher levels of education are more likely to be employed than those with lower levels, and this produces the relationship between higher income levels and higher education levels (Dreams Deferred, 1995). Also, "Workers with more education enjoy greater benefits, experience less unemployment, and, when dislocated from their jobs, find their way back into the workforce with much more ease than those with less education" (Stuart, 1999, pg. iii).

Some researchers have investigated the use of content-based instruction to implement workforce literacy activities in all literacy programs. Sticht (1997) indicates that this approach has been more successful in the development of job-related reading skills than general approaches to reading in most literacy programs. "Many research and demonstration projects show that reading can be taught using the content of job training -- or other contents, such as parenting, religious study, or health, - right from the beginning levels of learning to read" (p. 9). This concept is supported by Mikulecky (1997) who advocates relating instruction to materials that are seen and used regularly by adults outside the classroom setting. "Functional context in workplace literacy programs does not necessarily mean just using workplace-related materials. Some programs mix job-related materials with other literacy materials used by learners for hobbies, religion, or child-rearing, for example" (p. 10).

Each year, evaluation data about Even Start are published by the U.S. Department of Education. These data are usually acquired by synthesizing data from the local program evaluations that are required by law and sent to the Department (St. Pierre and Creps, 2000). Although most of the reports focus upon "educational" data, i.e., grade-level gains by adults, number of adults who attained a high school diploma or GED certificate, and other related items, there is virtually no information about workplace activities. That is because there is a paucity of information available in the local evaluation reports. For example, local evaluation reports usually contain information about the number of parents who obtained a job, but they usually don't report how many parents were actually looking for work (That may not be known by the program staff.). In addition, the number or percentage of parents who stated that "getting a job" was one of their goals when entering the program is often not identified. In other words, workplace information is often missing from many local evaluation reports.

Research Related to Workforce Information in Even Start Family Literacy Programs in Texas

Data Acquisition

In Texas, staff members of the Texas Center for Adult Literacy and Learning (TCALL), Texas A&M University, have become external evaluators for 16 of the 64 Even Start programs in the state. One of their tasks is to determine what effects Even Start programs really have on the families (parents with children seven years of age or younger) who attend these programs. Their methods include observation of classes, surveying parents, interviewing program staff and school officials, collecting pre-and-post-test data, interviewing staff of collaborating organizations, and other appropriate activities. They have become aware of the need to acquire information about parents in Even Start programs in regard to workplace issues because some programs have reported that parents in English-as-a-Second-Language (ESL) classes tend to leave the program whenever a job opportunity arises, assuming they have learned sufficient English to function in the workforce. This is a concern because the vast majority of families in Texas Even Start programs are Hispanics from Mexico and other Central American countries. This need for ESL instructional programs is not unlike some of the same need found in Australia that has been discussed by Morant (1995). In addition, literacy programs in Texas, with encouragement from the Governor and the Legislature, have begun to focus more on preparing a literate workforce for the first decade of the 21st century. With the assistance from recent welfare reform legislation that requires welfare recipients to seek either a job or enroll in an educational program for job preparation after two years of receiving welfare benefits, the state has been quite successful in removing large numbers from welfare rolls (Welfare Reform, 2000).

Although general research data are acquired from families in the Even Start family literacy programs in several ways, workplace-related information is acquired by the TCALL evaluation team members through only two methods.

Parent surveys

A parent survey instrument was initially developed in 1995. It was field-tested extensively during the first year of development for clarity, accuracy, and length of time required by family literacy parents for completion. It was then translated into Spanish. It was somewhat revised each year for the next three years based upon the data received from the parents because the perception of the evaluation team was that some data didn't seem to be useful, whereas, other additional data were still needed.

During 1999 and 2000, data were attained from over 1500 parents. The instrument requests information in many categories, but those that are most related to workplace activities are found below:

- a. Goals of parents when they entered the Even Start program, i.e., those that related directly or indirectly to work or preparing for work;
- b. Goals now – have they changed, especially in regard to seeking work;
- c. Plans for continuing their education once they have acquired the high school diploma or equivalency certificate;

Acquiring data from all parents enrolled in all programs would require several administrations of the instrument because of the sporadic attendance patterns of some parents. In addition, the "open admission" policy of most programs, i.e., whenever someone leaves, a new family is quickly admitted from the waiting list that most programs have results in new and experienced parents being placed in the same classes. Newly-enrolled parents cannot provide the kinds of data needed by the evaluation team through the survey instrument. Therefore, each local program coordinator was instructed to select two consecutive days in April or May (near the end of the program year) and administer the survey to all parents in attendance that day. Parents must have been in attendance for at least two months. Over a two-year period, surveys were completed by 1420 parents in 12 Even Start programs.

It is recognized by the evaluation team that the results were not acquired through a random sample and cannot be generalized beyond the programs in the study. However, taking into consideration that (a) there was no external funding available to conduct the study, and (b) the evaluation team was aware that they should not intrude into the program activities more than was necessary, this method of sample selection was used for parents enrolled in the program. Even though the data cannot be generalized, they do provide some implications for other similar programs.

Telephone follow-up interviews

In addition to the parent surveys, telephone interviews were conducted with almost four hundred parents who had left those same 12 programs during 1998 and 1999 for whatever reason, e.g., completed their high school equivalency, had to find work, moved from the community, spouse would not let the other spouse continue, illness to someone in the family, and related reasons. This oral-interview questionnaire was also field-tested extensively, translated into Spanish, and was updated periodically as the perceived need arose. The workplace data acquired by this instrument focuses upon goal attainment, success in acquiring employment, wages earned before and after participating in the family literacy program, and related information.

Staff in each of the 12 programs was asked to try to interview 40 parents. When more than 60 families had exited a program, a random sample was drawn through a table of random numbers. If fewer than 60 families had exited, the staff interviewed the first 40 parents they could find (if they could locate 40). Again, the sample is somewhat biased not only for those reasons, but also because: (a) parents needed a telephone to participate in the study and some families in literacy programs do not have them; (b) program staff conducted the interviews because parents would not talk to the research team members who are strangers (and they should not); and (c) program staff members tried to contact a family only three times before moving on to the next family on the list until they had interviewed the target number. However, without external funding support for the study, this was the best that could be done.

Data analysis

For the data in this report, only frequency counts and percentages were calculated.

Findings

Findings from the Parent Survey

The findings in this study were acquired through the two instruments described previously – the parent survey and the telephone follow-up interview. Only those findings that relate to workforce or workplace issues are presented here.

Over a two-year period, 1420 individuals responded to the parent survey (737 in 1999 and 683 in 2000). It is possible that some parents responded both times, although with the rate of turnover that exists among families in Even Start programs, it is unlikely that many did so. These were administered near the end of the program year, usually in April or May. Data pertaining to numbers and percentages of families are found in Table 1.

As seen in Table 1, somewhat fewer families were enrolled in 2000 than in 1999. This is reflective of a tendency to serve fewer families, but serve them better. These numbers reflect averages of 62 and 57 families per program per year, down substantially from 100 or more families that were generally enrolled in previous years of Even Start. Responses were attained from about one-third of those attending the program.

Table 1

Number of Families Enrolled and Number of Surveys Returned from Even Start Programs (n=12)

	1999	2000
No. of Families	737	683
No. of Respondents	231	227
Percent of Respondents	31	33

All three of the goals shown in Table 2 relate to workforce preparation. Knowing how to communicate in English is essential for acquiring and maintaining a job. This was the highest goal among all parents, reflecting the large ESL enrollment (mostly Hispanic) in Even Start programs in Texas. Acquiring a high school diploma or its equivalent – the GED certificate – is also usually required for entry into the job market. More parents in 2000 indicated that they intended to seek employment than in 1999.

Table 2

Goals of Parents When They Entered the 12 Even Start Family Literacy Programs in this Study in 1999 and 2000

	1999	2000
No. of Completed Surveys	231	217
Goal: Learn English	145 (62%)	127 (54%)
Goal: Acquire a High School Equivalency	49 (21%)	39 (16%)
Goal: Seek Employment	37 (16%)	87 (23%)

As seen in table 3, goals of parents may change while participating in the Even Start program. Parents were asked what they intended to do after completing the program. Whereas seeking further education was not a priority before families entered the program, when parents learn "they can learn", and some can learn quite well, they become more interested in further education because they also realize that their income level can rise with increased education. Most programs also offer "workplace orientation" classes to acquaint parents with job-seeking skills. For whatever reason(s), the total number who indicated they would seek employment or further education increased substantially after the parents attended the Even Start family literacy program. The "other" responses mostly indicated that the parent (usually the mother) planned to stay at home and raise the children until at least school age.

Table 3

Goals of Parents in Regard to Entering the Workforce or Preparing to do so After Participating in the Even Start Program

	1999	2000
Number of families responding	231	217
Will seek employment	123 (53%)	121 (55%)
Will seek further education	87 (38%)	76 (33%)
Other	21 (9%)	20 (12%)

Findings from the follow-up telephone survey

Although having parents become employed is not a primary goal of Even Start, it is hoped that as they improve their basic academic skills they can become employed if they choose to do so. Results in Table 4 show that the total number of survey participants who became employed after exiting the 12 programs in 1998 and 1999 almost doubled after they had attended an Even Start program.

Table 4

Employment Rates of Parents Before and After Attending the Even Start Program (n=368)

	Number Employed	Percent
Before Attending the Even Start Program	77	21
After Attending the Even Start Program	180	49

The kinds of jobs held by former students in the program were mostly entry-level jobs at low wages with little opportunity for advancement, e.g., custodian, housekeeping (motels), teacher's aide, cashier, sales clerk, childcare worker, truck driver, and assembly-line worker. However, many of the jobs came with benefits that were previously unavailable to the parents, i.e., medical insurance, workman's compensation, and a retirement plan.

Table 5 illustrates the income comparison of those same parents before and after attending the Even Start program. Some parents would not divulge information about their income, but many volunteered the data. They were proud to be employed and shared their income information. As shown in Table 5, although the number of hours worked per week remained almost constant, parents' collective hourly wage increased. That, plus the increased number employed are the basis for the calculation that documents the 150% increase in weekly income by all the parents in the sample. The reader is reminded again that this was not a random sample, but a sample of those parents who had telephones and would participate in the telephone interview.

Table 5

Wages Earned by Even Start Parents (n=368)

	Hourly Wage	Hours Per Week	Number Employed	Percent Employed	Total Wages Per Week by All Parents Combined
Before Even Start	\$5.78	31.5	77	21	\$14,019.
After Even Start	\$6.54	30.1	180	49	\$35,434.

Observations

One of the effects of Even Start family literacy programs in Texas is that as parents participate in programs, their goals about seeking employment appear to change.

Even though acquiring employment is not a primary emphasis in the federal legislation that supports these programs, participation does enhance a parent's likelihood of attaining work. Because of the numbers of Hispanic families who attend programs in Texas, acquiring English-speaking skills is their most important goal, but even this skill, in turn, is often in preparation for employment. Their incomes are often low, especially immediately after arriving in the country. Therefore, parents often leave the program as soon as they attain sufficient skills in the English language to function in the workplace.

Collectively, the parents in this study increased their incomes substantially after participating in the program. The average increase of only 76 cents per hour may not seem like much to some folks, but when the average annual family income for these families is usually less than \$15,000, the added \$1,580. (calculated on a basis of 40 hours per week for 52 weeks) probably is substantial to them. At least, many indicate that it is during the interviews.

Without considering the workplace aspect of the program, Even Start family literacy has become an important opportunity for tens of thousands of families each year in the United States to improve their literacy skills. Since the average size of a program is about 60 families and there are 800 programs in the country, then there is the potential for 48,000 families to annually benefit from this nationally-funded program. Many of these parents will be able to become employed because they have increased their basic literacy skills and can better communicate in English. Although not reported here, their children make substantial progress toward readiness for school. Economics aside, the moral and ethical responsibility for providing opportunities for parents and children to become more literate and succeed in the world around them is well worth any investment a nation can make.

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WORKING KNOWLEDGE OF ONLINE LEARNING AMONGST VOCATIONAL EDUCATION AND TRAINING PRACTITIONERS

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Introduction

This paper arises from a collaborative research project between the Adelaide Institute of TAFE, TAFE South Australia and the Research Centre for Vocational Education and Training at the University of Technology Sydney. It presents some of the findings of a research project conducted during 2000 involving 18 which focused on exploring the knowledge and experiences of vocational education and training (VET) practitioners engaged with vocational teaching and learning online. The analysis of the data is not yet complete so this paper should be considered as a working draft. The full research report will be publicly available at the end of January 2001.¹

Online teaching and learning was defined within the study as a form of flexible teaching and learning facilitated by the use of the Web-based technologies and resources. It may involve a program of study conducted fully online or a hybrid program based on a mix of online and face-to-face strategies. It may take a relatively simple form such as providing course materials via the Web or email communication between the facilitator and the learner or it may involve the use of complex and globally interactive activities amongst learners and between learners and the facilitator. For the purpose of this study, all these activities are defined as 'online'.

It is necessary at the outset to explain why we have used the term 'VET practitioner' rather than teacher/lecturer. Within this group, and typically of the VET workforce more broadly, multiple roles were the norm. Only 3 of the 18 participants described themselves as having a single role. Nearly half the members of the group had 3 or more roles which spanned technical, instructional, content development, marketing, professional development, mentoring, co-ordination and management roles. Thus a title such as 'teacher' cannot adequately capture the diversity of roles held by members of the group.

The study involved practitioners in TAFE Institutes in South Australia who are considered to be at the leading edge of online developments in VET.² Because of its self-nominating nature, small size and particular context, care is needed in generalising from the experiences of this group to the wider community of VET practitioners. Nevertheless, the findings are suggesting some lines of inquiry worthy of testing in other contexts and with other groups.

Six main themes have emerged from the data so far.

- Constructing knowledge about online learning.
- Changing professional roles and practice
- The workplace learning of VET online practitioners
- The organisational context of online teaching and learning
- Use of online technologies for the conduct of research
- Use of online technologies for professional development

This paper deals with the first four of these themes.

Constructing knowledge about online learning

The research reveals a group of VET practitioners actively if not always consciously engaged in the process of constructing and discarding knowledge about online teaching and learning derived from their own idiosyncratic experiences. To do this, they are telling the stories of their contributions, helping themselves and others to see the problems from many different points of view. They are continuously making choices based on certain presumptions, although these are rarely conscious or articulated. They are creating a language with which to describe more clearly what they do, believe and value. They are sharing what they

¹ The final report will be available on the RCVET website at <http://www.rcvet.uts.edu.au/>

² The group comprised 13 women and 5 men, aged 30-58 with backgrounds in Office Administration, Business Studies and IT (10), English as a Second Language/Adult Literacy and Numeracy (4), from Community Services (2) and 1 each from Library Services & Women's Education. Data was collected through a written survey, structured telephone interviews with individual practitioners, four online research events and two face-to-face workshops

know in verbal and electronic conversations in their workplace, between workplaces and around the globe, thus helping to build common ground for action. From these practices they are designing, producing and distributing online products and services for use by practitioners and learners.

What they are not yet doing in any systematic or conscious way is reflecting on what inferences (if any) may be drawn from their individual and collective experiences. However this finding must be modified to take account of the production and circulation of practitioner knowledge embedded in online learning materials and formalised professional development activities. Nor are they yet systematically testing their interpretations of online teaching and learning (as distinct from techniques) against the interpretations of others within their own organisations or beyond. Formal theory plays little part in the making of practitioner knowledge about online teaching and learning.

Furthermore, the research suggests that organisational and systemic interest in or capacity to foster and share practitioner-constructed knowledge for wider application and testing is highly variable and generally at a low level.

The research sought to briefly explore what the practitioners believed about learners and learning and teachers and teaching online. Despite many shared educational values and a common commitment to online practice, there was agreement within the group on only a very limited number of matters.

A small majority of the practitioners did not believe that all students could learn effectively through online activities. Others believed that all students could learn successfully online but more were unsure whether this was so. Almost all believed that having computer skills and being comfortable with the technology was a necessary pre-condition for learning online. Learner motivation and commitment to learning was the second most common attribute required of online students, together with a willingness to try new methods. An independent learning style was thought an important attribute by almost half the participants. Other attributes generally agreed as necessary included communication skills, a reasonable command of English and an ability to read.

Is online more suited to some areas of study than others? Three quarters of the group believed that online delivery is more suitable in some industries or occupations than in others although 3 were unsure. Most believed that practical technical skills (skills in which 'touch and feel' were important) required some face-to-face learning, although they remained receptive to new ways of thinking about how online could assist the development of practical skills, leaving open the possibility of their view changing in light of other experiences. Overall, there was a shared view that different learners, different competencies and different industries required different mixes of online and face-to-face. Just what factors would lead to any particular mix was not made explicit.

The areas of disagreement about teaching and learning online were greater than the areas of agreement. There was no shared view within the group as to whether all key competencies could be learnt online. In the survey, half believed they could, 6 did not and 4 were unsure. Language, literacy and ESL competencies were frequently mentioned with some degree of ambivalence in terms of the extent to which such skills could be developed online, particularly in relation to spoken language skills. Team skills were generally thought best developed largely through offline strategies.

Respondents to the survey were also asked to rate the importance of a number of benefits commonly attributed to online learning. Every respondent emphasised benefits to learners rather than to teachers or the organisation and all believed that the capacity to meet the individual need of students was a very important benefit. Other benefits rated as important or very important by most of the group were promoting access to VET of disadvantaged learners, meeting the needs of workplaces and meeting the growing demand for VET. Significantly, many challenged the notion that online learning reduces delivery costs, and even if it does, few thought this an important benefit, with 6 indicating this as unimportant or very unimportant.

Practitioners nominated a wide range of other benefits they attribute to online learning including exposure to new technologies and the opportunity to reflect on teaching practice; the ability to easily tailor content and update material by teacher; the possibility of improved retention and completion rates through the provision of more study options; enabling communication between distance learners – each other and the facilitator – and helping shy students to communicate without fear.

The research also sought practitioners' views of teachers and teaching. Respondents were asked how much they personally agreed or disagreed with a number of statements about online teaching and learning, drawn from the literature about online teaching and posed in order to shed light on the educational theories which guide them. Responses suggested agreement around many statements, signalling a convergence of professional judgement in some areas, but also suggesting widely differing views in others.

With only one exception, the group believed that good online teaching is about building community, caring for students and being responsive, although the exact meaning of this commonly attributed characteristic remains unclear. Building and belonging to community was a recurring concept evident all the data collected and was obviously very highly valued by this group.

Most participants agreed that teaching online is considerably more intensive than traditional face-to-face education and that teaching becomes more creative when it uses interactive multimedia. They also believed that online work is undervalued because it is regarded as a practice still struggling for organisational legitimacy.

In contrast, members of the group held very differing views on a wide range of matters. The group was divided on whether all teachers could become effective facilitators of online learning. There was no consensus within the group on the following statements.

While emerging online technologies enable different methods of delivery, the teaching strategy is more or less the same as in a face-to-face context.

The knowledge and skills of teachers about online learning is the single most important factor affecting implementation.

Educational media are simply vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition.

Despite these differences, there was considerable agreement as to the attributes which would indicate that a teacher would be an effective facilitator of online learning. The most commonly described attribute was that of being imaginative and creative, a lateral thinker. This was most frequently coupled with the attribute of being a risk taker, someone who was prepared to get out of their comfort zone and try new things, to experiment.

These attributes present as personality traits rather than 'skills' or 'knowledge' or 'behaviour' in the way we usually understand them. If it is the case that personality traits rather than competence are significant in the adoption and implementation of online VET, then the implications for the recruitment, induction, role assignment and professional development of online practitioners are substantial.

A small number of respondents thought that already being an effective facilitator of learning in a face-to-face setting was a desirable attribute, while the personal qualities of being flexible/adaptable, of patience and persistence and of being enthusiastic were attributes regarded as desirable by some.

The research explored whether involvement in online activities had changed the educational values and practices of practitioners and, if so, in what ways and to what extent. When asked directly whether their ideas about education or their educational values had changed as a result of their experience in online delivery, most indicated that their professional values had remained the same, but involvement in online activities was causing many of them to reflect on their teaching approaches and strategies.

...it's making everyone go back and is making them think about the general education issues

For myself it has not been a rethink - my overall philosophies haven't changed but the way I do it might. . I look more at the learners from the learners' point of view (imagining the experience for them and what assistance might be needed)...

Some reported a heightened level of awareness of individual differences and different needs amongst learners. Others indicated they had shifted towards a more collaborative approach in relation to both teacher-teacher and teacher-learner relationships. Some no longer felt a need to know everything and saw the need to provide for greater learner choice and more learner input. Increasing recognition of the value of informal learning was also evident. However, there was no consensus as to whether their involvement in online activities had changed their relationship with learners:

It would seem that value clashes are emerging in both the implementation of online learning itself and at the intersection between educational philosophies and management of online learning. Practitioners' sense of education as a human service rather than a 'productivity centre' was causing a good deal of anxiety for some. Overall, there seems to be a growing tension between the organisational emphasis on administration, finance and class hours and the practitioners' own sense of professionalism which is being progressively enhanced by involvement in online activities.

Changing professional roles and practice

The research shows how online practitioners are facing multiple tensions, dilemmas and contradictions of their work. Many of these derive from the wider changes in the work of the TAFE teacher/lecturer. Nevertheless, the dichotomies they experienced are clear. On the one hand they are excited and challenged by their online activities while at the same time they are feeling frustrated and pressured by lack of time, infrastructure and resources. On the one hand they have a heightened sense of professionalism deriving from their involvement in online VET while organisational pressures seem to challenge their sense of professionalism and their professional identity.

Participants reported a general shift in their professional practice over the past five years from an instructor role to a facilitator role, a shift not confined to or necessarily caused by teaching online. They were also experiencing the impact of a general organisational and systemic shift towards self-paced learning, and expressed reservations that this is not desirable for all learners in all instances. They felt considerable pressure to be more flexible and multi-skilled and some reported feeling greater stress as a consequence.

There have been huge changes! ...Five years ago we were responsible for the preparation and delivery of class materials plus a small portfolio with a limited range of admin tasks...now the system is asking more and more of people (Interview)

...most teachers are working harder - more is imposed on them - reports, assessment, evaluation, - there's less time for preparation - system upon system, upon system! (Interview)

Other contextual factors impacting significantly on the roles of practitioners include a stronger emphasis on budgetary restraint and income generation at lecturer level; a strong emphasis on accountability and auditing; pressure to meet deadlines and student hours targets and the devolution of additional administrative responsibilities (formerly done at middle management level) to lecturer level. Cumulatively, this is having a negative impact on lecturers' perceptions of their professional role and the quality of their working life.

I feel I can't do my job as an educator as well as I'd like - the pressures of balancing the budget is to me not my role...balancing time and budgets at work has to be done in the context of my whole life - my own life as a wife, mother, administrator and educator - if there is more pressure on the administrative side then one of the others has to go! (Interview)

It also seems that more tenuous employment conditions have impacted on their role and work in a number of significant ways. Especially troubling is the suggestion that the shift to individual contracts has caused some TAFE staff to be increasingly reluctant to speak out.

...more teachers are on contract and live in fear of losing [their job] and don't speak out... there is fear and frustration around their jobs (Interview)

Importantly, the group suggested that being on a contract had been a factor leading them to engage with online VET. They suggested that, as contractors, they felt a need to develop and maintain a profile and to keep a range of employment options open. This question of the non-standard nature of the group's work and the associated conditions will be further considered in the final research report.

However, for virtually all members of this group, their involvement in online activities has caused major and very positive changes in their professional role and practice, changed their perceptions of teaching and increased their sense of professional satisfaction and challenge. Satisfaction with their current jobs was high, and even more importantly for this research, involvement in online delivery has been a very positive experience for the majority of respondents, increasing professional satisfaction for 15 of the 18 practitioners. When asked whether their first experience of online had shaped their subsequent involvement, most indicated that it had prompted a fundamental shift in their professional lives. It has provided more (and welcome) work challenges, more involvement in planning the content and sequencing of teaching, more focus on the teaching process rather than the content to be 'conveyed' and more opportunities for team-based work which they clearly valued highly.

In a classroom ...I wasn't stimulated...it's now stimulating and challenging trying to train the staff up...I'd be disappointed at the thought of going back to face-to-face without the flexibility of online

I feel its more interesting - it always was but now it's more so. I think more about why I am doing what I'm doing.

I now do more research instead of relying on old material - material online is easier to update

I'm extremely lucky - I'm not bored...I really like the variety

As a result of their involvement in online learning, most participants had a positive feeling of being part of a big story beyond the confines of their own day-to-day work, of feeling that their professionalism has been extended by the challenges of online and, in most cases, acknowledged.

...I have gone from being a classroom teacher to a global teacher involved in research and communication with a student base from anywhere in the world (Interview)

we are ordinary people but the technology has allowed us to become globally significant...(Interview)

However, a couple within the group expressed some dissatisfaction, noting that despite having acquired new skills and being recognised internationally, their Institute did not recognise or utilise their skills in online learning.

When asked whether these changes have made them feel different about themselves, the overwhelming majority indicated a positive difference, signalling confidence, skills, interest and enthusiasm as positive outcomes. Some expressed a degree of ambivalence about the way online teaching changes professional practice. They were troubled or frustrated by the way online causes the teacher to become a learner, by the shift from being a 'knowledge-giver' to a learning facilitator and by having to live with the feeling of not being in control. Some made comments which went to the very interesting and important question of the nature of online work itself. For some, its high-intensity and emotionally exhausting nature is causing them to reflect on and worry about relationship between people and online technologies.

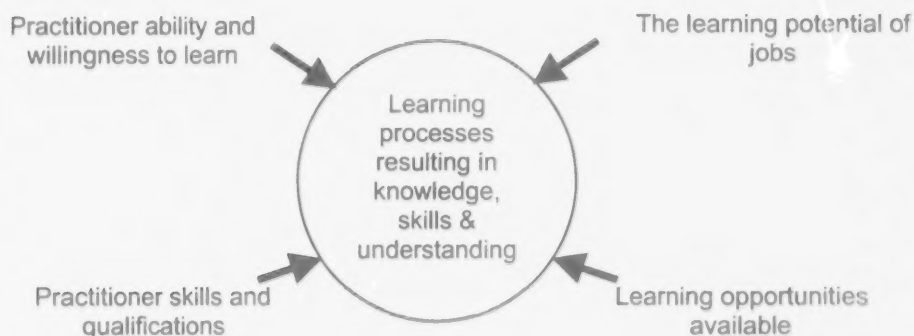
Sometimes I can't face turning the computer on...although I'm generally excited by it ...it's disembodied...there's a difference in how people relate online...I can't explain it but it's different...there's a hypnotic 'pull of the thing' in doing e-mails...there's something almost too smooth about online. (Interview)

Others were concerned that they are under pressure from their managers to do everything online rather than finding an appropriate mix of face-to-face and online. In this they felt caught between competing pressure from their organisation and from their own professional need to respond to the needs of their learners.

Workplace learning

This research set out to explore practitioners' ideas about and experiences of professional development. In the process it became clear that the traditional concept of 'professional development', with its historical overtones of formal training and instruction, of behaviour modification, change management techniques and de-contextualised learning are not particularly helpful in explaining the complexity of why and how this group of practitioners came to know and love online VET. Despite their own participation in formal professional development programs, and despite the fact that many had a formal professional development role, formal training was the least valued form of learning and the least useful source of learning for this group.

The concept of workplace learning seems far more helpful in capturing the nature and diversity of the professional learning experienced. We are now beginning to see the development of conceptual frameworks which acknowledge the complexity of workplace learning and its holistic, social and situated nature (Tavistock Institute 1998:57). One such framework (Onstenk 1997) suggests that learning processes which result in knowledge, skills and understanding arise from the specific interaction of four factors, illustrated in the diagram below.



Source: Derived from Onstenk, J. (1997), "Innovation, work teams and learning on-the-job", paper for European Union Seminar *Knowledge and Work*, Amsterdam

These conceptual frameworks will be considered further in developing the final research report, as will their relevance to the production and application of VET practitioner knowledge. For the purposes of this paper, Onstenk's framework has been drawn upon provisionally to organise the findings.

Practitioner ability and willingness to learn

The single most important factor triggering the decision of all but one of these practitioners to become involved in online learning was personal and professional interest. These were keen and ready to learn something new. Sometimes their initial involvement was intentional but in many instances it was simply a chance opportunity, being ready for a change and being in the right place when an opportunity arose

I was looking for change and stimulation. (Interview)

[I was] just ready for a change and in the right place. To be honest I hadn't a clue what I was getting into. (Questionnaire)

...at that time students couldn't access material out of class time...I had a colleague who was using Web CT - I thought I'll try that for the students - that was all the trigger I needed!... (Interview)

It simply happened! I was given Internet access at work and explored. (Interview)

An accident - just one of those accidents...This was no conscious decision, but it was exciting. (Interview)

Practitioner skills and qualifications

This was a group of highly experienced practitioners with a strong sense of their own professional responsibilities. Collectively, they represented 204 years of VET experience. The first of the group to become involved in online learning did so in the early 1990s, the most recent to do so became involved in 1999. On average the group had 3.4 years involvement in online learning.

While most were formally trained as teachers, not all were. The research did not explore the skill and qualification mix within the group or record differences, if any, between those who were teacher-trained and those who were not, although one participant was obviously conscious of difference when commenting that

...I don't know all the fancy words to use - I'm not a trained teacher...

Most who were initially hesitant to become involved in online learning commented in terms of their initial lack of confidence in their own competence and a fear of the unknown.

The learning potential of jobs

Onstenk's concept of the 'learning potential of jobs' is proving helpful in explaining the finding that the scope and variety of jobs themselves and the immediate physical and social environment in which they are located were very important factors influencing VET practitioner learning about online.

The design of individual jobs and the organisation of work play a critical part in opening or closing learning possibilities. Many jobs, even professional jobs, are not big enough for the people who hold them and are unlikely to be a source of learning. In this area of knowledge-in-the-making, where practitioners are creating most of the practical knowledge themselves, the design of their jobs and their work processes become central to the online endeavour.

The most striking thing about this group of practitioners was that their jobs were broad in scope and offered considerable variety and discretion with, as mentioned earlier, multiple roles being the norm. Where technologies are being applied to learning, it has been custom and practice in many institutions to structure work through the division of labour where the roles of program design, instructional materials development and teaching have been separated. In relation to teaching online, this was generally considered undesirable. Three quarters of the participants disagreed or disagreed strongly with the statement 'In the area of online learning, design, development and teaching are really separate and distinct activities, best done by people with different skills'. This and other findings suggest a need for jobs in the area of online teaching and learning to be strongly integrated and multi-functional. This proposition needs to be tested.

A related theme in responses was that job discretion and work freedom were important to learning how to facilitate online learning. Freedom to create, freedom of choice to participate and freedom to make mistakes were ideas consistently evoked as important factors facilitating staff learning about online VET.

Learning opportunities available.

The practitioners involved in the study identified four different learning opportunities available to them which they utilised to learn about online teaching and learning.

Learning by doing. Practitioners reported that in the beginning they had little choice but to learn about online by doing it because they were pioneers 'making it up as they went along'. They were also individuals with an inclination to learning through problem solving. Assigned real problems such as product-development projects, they simply rolled up their sleeves and did it. While strongly attached to this form of learning, it was not, of itself, sufficient to ensure adequate learning.

Learning through work colleagues and teamwork. Supportive work colleagues and membership of a team was perhaps the key factor in learning about online VET by this group. When asked how they first learned to use information and communications technology for online learning, the source most frequently cited was work colleagues in the same discipline area. Colleagues with online learning or discipline expertise were and remain the most used source of information and advice about online learning.

Within the group, and reflecting institutional priorities, strategies and budgets, mentoring is widely used to develop staff capability to work online. Different meanings are attached to the word 'mentor' by group members, with some referring to informal collegial support while others used it in a more formal sense of structured and planned personal coaching and development. Mentoring is widely accepted, practised and valued by the group as a method of developing online teaching capability.

Learning through communities of practice: For this group of practitioners, being a member of a community of practice was seen as a significant source of learning. Communities of practice, while intersecting with the concept of work teams and supportive work colleagues, were not always the same and offered wider learning possibilities, unconstrained by place, time or field of professional expertise.

Learning through formal off-the-job professional development: Most members of the group seemed to have little confidence in formal off-the-job professional development activities, expressing scepticism about the quality of the formal activities they had been involved in. This was not however a universally held view and, for some, conferences, overseas study tours, workshops and fellowships had provided good learning opportunities.

Despite reservations about the direct value of structured off-the-job development, many participants identified less tangible but nevertheless useful outcomes from formal professional development programs. What seems to be emerging is a view about how different formal and informal opportunities can work together to enhance practitioner learning, exemplified by the following interview comment.

Formal training taught me the fundamentals of how to do it. Development projects have forced me to identify areas in which I need to learn more and to seek assistance. And that assistance has mostly come through informal training by more experienced people than I.

As a way of gaining further insight into the way practitioners believe they learn, the group was asked what advice they would offer to colleagues wishing to prepare themselves for participating in online delivery. Some commented that advice was context-dependent while others believed that the learning styles of their colleagues would need to be considered, drawing a distinction between 'problem-solvers' and 'step-by-step learners'.

However, at least four priorities were discernible in participant responses.

It's attitude, not skills: Participants believe that, in the first instance, adoption of online practices is dependent on practitioner attitudes rather than technical skills. They stress the importance of having a 'flexible attitude', being 'open minded' and being 'willing to explore possibilities'. This affirms the shared view of the group (indicated earlier in this paper) that personality traits of individual teachers are highly relevant to the take-up of online VET.

Learn basic computing skills: Participants stressed the need for a basic familiarity with computers and the Internet and good mouse skills. All participants believed these skills were only required at a low level in the first instance. Most believed that formal professional development was now the best way to acquire this basic technical competence, although this was not a view shared by all, with some believing that 'playing around' remains the best starting point for acquiring computing skills.

Think about the learning experience, not the technology: Respondents consistently stressed the need for new starters to reflect carefully upon the educational dimensions of online learning and to be educationally sound in their decision-making. They pointed to the need for a clear view of the educational and methodological issues involved, to ask questions about why go online and where might be a good starting point and to think how to move through the process. They also emphasised the need to focus on the teaching and learning processes, not the technology.

Have a go but not by yourself: Most participants, perhaps because of their own experiences pioneers, believed that getting in and having a go is the best way to get started, although they consistently stressed the importance of learning from respected colleagues. Interestingly, the idea of 'time to play' was frequently raised,

Organisational context

The adoption and implementation of online VET is affected by the content and structure of work. It is also clearly the case that the culture, policies and structure of the organisation can impede or facilitate its adoption and implementation. There seems to be a wide range of organisational limitations impeding the take-up of online learning. Generally, these fell into four categories.

Inadequacies in the technological infrastructure. Specific practical barriers identified included network slowness, insufficient teacher access to computers, not enough modems for external access and insufficient phone cabling.

Inadequate allocation of time for designing, developing and delivering online programs. Despite very high levels of personal enthusiasm for online learning, lack of time was consistently and frequently described as a significant barrier to involvement in online VET, underscoring practitioners' deepening concerns about having to learn about and develop online education outside of normal working time, on top of actual class time.

There are not enough people - we are always playing catch-up

How long will the goodwill last?... teachers are tired...they can't keep doing it all in their own time... you have to keep looking at e-mails to check if figures are on target because if you are under hours then you are seen as having too much [funding] and if you go over hours then you are seen as doing more for less and you don't need that much funding... so it's a 'no-win' situation...looking for fee for service we joked the other day that we should 'open a brothel' to raise funds

Lack of support from local management or influential colleagues. All participants regarded policy at the state level (and often at the national level) as supportive of online learning, but many believed that policy is not always backed by local managers or by the provision of adequate resource allocations, especially for reliable and fast technological infrastructure at Institute level or fair allocation of time for online activities.

Organisational cultures which do not promote collaboration and innovation. While the participants in the group were drawn from a number of TAFE Institutes, came from different discipline areas and have had very different roles and experiences, they all believe that staff collaboration is central to the development and

application of online practices. All their personal experiences of online have been through collaboration and sharing and they believe that where an organisation does not promote this way of working, online innovation and take-up is impeded.

On the question of whether all training organisations can become proficient in the delivery of learning online, most believed they could while a few were unsure. However, when asked what characterises those training organisations, which are most likely to become proficient in the delivery of learning online, there was an almost universally consistent response. The following is a good summary description of group's views.

Organisations that... encourage and accept change, provide and promote flexible teaching and learning environments, have senior management endorsing and promoting online learning, are innovative and visionary, have a change management plan, and have a professional development strategy

Conclusion

This paper has reported on preliminary research findings concerned with the knowledge and experiences of practitioners involved in online VET. These findings go to important questions of practitioner construction of knowledge about online learning, changing professional roles and practice, the workplace learning of VET practitioners and the organisational context which supports or limits online teaching and learning

In a VET policy environment keen to accelerate the take-up of online learning, the findings serve as a timely reminder that online teaching and learning is still a very new area of human endeavour and a new area for VET policy and practice. It is an area in which there are no necessary or deductive truths and where bold hypotheses have not yet been put forward systematically and subjected to rigorous testing and criticism. There is no single body of theory which is widely accepted as informing online practice in VET, although distance education theories are widely regarded as helpful and relevant.

There is also a good deal of uncertainty about the extent to which institutionalised knowledge about the application of educational technologies or teaching and learning is applicable to teaching and learning in a Web-based environment and therefore there is uncertainty about the extent to which this idealised knowledge could form a foundation for knowing about online teaching and learning.

Online vocational teaching and learning lies at the intersection of multiple fields of inquiry, each capable of throwing light onto professional practice. VET policy and practice in relation to online teaching and learning rarely draws down from theoretical perspectives. Where it does so, these are most likely to be perspectives from the field of adult education and, to a lesser extent, theories of change and change management. It rarely draws down from other potentially helpful fields such as organisational systems thinking or information systems. This research suggests that adult education research concerned with practical theorising (Usher & Bryant 1989) is helpful in explaining what is happening in the development of knowledge and practice about VET online. It is also apparent that such theories are, of themselves, insufficient to explain how practitioners construct knowledge about online practice and the factors shaping their construction.

Research such as this, based on the knowledge and experiences of a small group of leading-edge practitioners, will not necessarily produce propositions which can be generalised across all online teaching and learning in VET. However, this research is hoping to go beyond simply reporting the reflections of a single group of practitioners. It aspires to report in an integrated way on multiple dimensions of the group's perceptions and experiences. In doing so it is hoped that it will offer insights into how the knowledge-base underpinning online teaching and learning in VET is being constructed and how the personal attributes of individual practitioners, their workplaces and the organisation within which they work interact to create a learning context for the construction of this working knowledge. From this evidence-base, potentially generalisable propositions are beginning to take shape.

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WORKING KNOWLEDGE FOR NEW EDUCATIONAL LANDSCAPES

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In recent education and training policy and research there has been growing emphasis on 'capacity-building', an orientation to educational organisation which acknowledges, orchestrates and applies learning as a means to both organisational change and enhanced educational outcomes. This concern with mindful educational work turns the rhetoric of lifelong learning and learning organisations back onto education and training. Teachers become 'learning professionals', no longer simply responsible for structuring other's learning but also for ensuring their own on-going learning and its applications in local work contexts.

For many in education policy and practice, capacity-building seems to offer a viable way forward. For Moira Scollay, Australian National Training Authority CEO, learning lies at the heart of a vision not only for education and training, but for democracy and economic prosperity. She sees a future characterised by lifelong learning which builds on a culture of learning and innovation, coupled with universal access. As she says,

In our rapidly impending knowledge society, it is a choice between becoming lifelong learners and a learning society or missing out on controlling and creating our own future. Is it worth debating? (Scollay, 2000: 12)

This emphasis on capacity-building to create and sustain lifelong learning has stimulated considerable interest in teacher's working knowledge and the conditions that support the formation of capacity-building organisations in education. It is informing new debates on the importance and character of teacher professional development which may lead to the re-design of teacher education and, in the vocational education sector, may encourage the redevelopment of serious teacher preparation and credentialling. However, these developments must be contextualised in the wider frames defined by particular neo-liberal patterns of globalisation and the deregulatory agendas of recent State and Commonwealth governments in Australia. While these new concerns with learning amongst learning professionals may bring substantial benefits to education and training and the learners they support, there are also costs which must be acknowledged.

My aim in this paper is to contextualise capacity-building in order to begin to identify the benefits and costs of these new ways of doing education and training. I begin by mapping the broad context in which capacity-building educational provision is emerging in order to pin down where capacity-building practices are developing. In the next section I focus on a specific capacity-building organisation, drawing on case study research to clarify the kinds of working knowledge that have developed to sustain that organisation. Finally, I recontextualise capacity-building developments within the broader patterns of educational provision and politics in order to identify their benefits and costs. In particular, I consider the sources of these new working knowledges and the implications of decentralising these knowledge sources in specific particularistic enterprises. My general argument is that capacity-building is a boutique development which is currently sustainable because it builds on longstanding cultural and public infrastructure. It is not clear that it is sustainable either in the long term or on the kinds of mass level which will be required in the emerging knowledge economy.

Changing contexts and a 'learning landscape' in education and training

Over the last thirty years, increasing economic and cultural global integration has driven significant social change. Much of the recent restructuring arising from these complex social dynamics has been informed by neo-liberal discourses that privilege individuals over society. While globalisation is incomplete and differentially developed, there is a growing trend for nation-states to move away from statist models of national organisation and planning, and to affirm 'post-welfarism'. In such societies, governments reorient their work away from a societal level and, instead, operate increasingly through individual actors and the choices they make. As Rose (1996: 327) notes, this work 'seeks to govern without governing *society*, to govern through regulated choices made by discrete and autonomous actors'. These broad contextual changes are creating new nodes of governance which depend, more than before, on market mechanisms and other deregulatory procedures which, increasingly, individualise and decentralise social action.

In education and training these neo-liberal developments have profoundly challenged the post-world war 2 patterns of educational provision. Public education which was state funded, orchestrated through a centralised educational bureaucracy and operationalised through a largely state-employed and regulated teaching force has been subject to diversification. The convergence of the politics of voice and neo-liberal market commitments has seen public education trending towards the status of an enterprise. Public funds are distributed on a competitive basis to this public enterprise and to parallel private enterprises. Institutional regulation and control is substantially decentralised with the state retaining a steering capacity through funding and accountability measures. Teachers have been pressed towards decentralised employment relations, with enterprise bargaining, moves towards individual employment contracts, individualised performance management and diversified reward and incentive structures. While teachers continue to be a formidable occupational group which is large in size, with a wide but relatively flat division of labour, and well organised through unions and professional associations, this occupational and organisational coherence is under challenge.

These reforms of education have had a significant impact on both the educational landscape and the work of teachers. Instead of public education being foregrounded as the predominant means for orchestrating national educational provision, it is overshadowed by the formation of a training market. Existing public provision is re-regulated so that public providers (particular schools, TAFE Institutes, community providers and universities) become discrete educational enterprises with increased opportunities to choose their course of action within the regulatory frame. These public providers are pressed towards a hybrid public-private pattern of operation. They stand alongside a growing number of private providers which can now access public funds to support their provision of education and training to particular clients. These marketising trends stimulate both deinstitutionalisation and quasi-privatisation of public education and training. Funding constraints and competitive pressures drive work reorganisation and intensification. It encourages innovation but oriented towards particular client services rather than public service in general. These trends are confirmed as governments demand accountability on financial and managerial grounds but downplay accountability on social justice, equity and democratic participatory grounds.

Teachers are actively involved in this politics of reform within education and training. They are caught by the imperatives of government, realised through changes in funding, policy, employment relations and work practices, which demand redesign of their work, their identities and their commitments. For some, this new educational landscape provides opportunities to slough off the baggage of public service and to redefine the business of education and training as a business. For others, these changes herald a philistine world where education is simply instrumental to productivity, profitability and power. For such educators, voluntary departure packages can provide an honourable means of escape. Others stay on at work but see their mission as resisting change and defending education as a citizen right for all. Others again work between compliance and resistance, renegotiating the character of educational practice by developing new ways of doing and supporting learning. These emergent educational practices, arising as neo-liberalism confronts traditional education and training cultures, have been described as 'capacity-building strategies' (Fullan, 1998; Seddon & Malley, 1998; Seddon, 2000).

Patterns of capacity-building

Through a series of project, I have investigated these innovative 'capacity-building' educational practices. Let me illustrate these developments.

In a TAFE department, the remaining 3 permanent staff worked with sessional teachers coming from industry to develop a cooperative approach to curriculum development, pedagogy and assessment. The effect of this development was to meet the Institute's managerial and budgetary requirements and also extend educational opportunities for students and staff. Perhaps more significantly, the innovations served to realign the work of the department so that its organisational axis shifted. The department became less significant as an organisational frame and staff saw their contribution to the wider occupational community they served. They occupied a distinctive place in that community, producing knowledge through the engagement of industry-based and permanent teachers, disseminating knowledge as they inducted students into the knowledge and ways of the occupation, and circulating knowledge and expertise through the occupation more generally (Seddon & Brown, 1997)

In a recent consultancy investigating staff development to support research in VET providers, there was considerable evidence of staff engaged in knowledge production for organisational purposes (Seddon & Malley, 1998). CEOs in some VET enterprises approached research instrumentally as an externally imposed requirement. Other managers recognised that, in self-managing organisations, there was a need for site-based knowledge production to inform organisational decision making. This knowledge production provided an valuable strategy for staff development which benefited both individuals and the enterprise. Management of

the enterprise increasingly became a process not of hierarchical decision-making but of cooperative engagement which supported a culture of questioning and enhanced enterprise operations.

In a small private training company, the managing director indicates that employers seek out her training provision because it makes a difference to their productivity and profitability. She is committed to an integrated educational approach to workplace learning which is rooted in the culture of the workplace and she asserts that these educational practices depend upon the professionalism of her teachers. However, she notes, she requires her teachers to develop their skills in crossing boundaries between educational and industrial contexts, dealing with the contradictory discourses of public service education and capitalist profitability in industry and learning to use forms of organisation and reporting which accommodate the culture of workplaces (Waterhouse & Sefton, 1997).

In universities there has been a diversification of research and research training driven partly by government funding and by client demand. In particular, there has been a proliferation of professional doctorates alongside traditional PhD's. There is growing evidence that professional doctorates are perceived to be more relevant to the contemporary world of work. Professional doctorates are oriented to the preparation of advanced professionals who use their thesis to make a contribution to knowledge which enhances professional practice. Students are generally expert professionals who often know far more about the professional context than the academic supervisor. Commonly the programs are explicitly focused on the student's work experience or on specific issues that arise in the workplace. In some cases employers sponsor students to investigate workplace issues in their professional doctorates, and some work-based programs are formally contracted between employer, student and university. These arrangements problematise traditional relations of learning and expertise within doctoral education and also erode boundaries between the workplace, profession and academia (Lee *et al.*, 2000).

In schools, similar pictures emerge. In England, Lawn and MacAnGhaill's (1996) research indicates that primary school teachers live the loss of a public system of education by refocusing their efforts on their own school workplace and its local community. Self-management has meant that they all act as managers as well as teachers. They all monitor and supervise each other within the workplace. The school as a social space has changed. The old boundaries of the public school place and the private classroom space have been reworked. Classrooms have become open to collegial surveillance while the school has become both more privatised - with security fences and increased regulation on who can enter the premises - and more outward oriented as the principal, governors and parents cross the school perimeter more frequently as they engage in building community relations, work with employers and participate in school governance.

A number of themes arise from these illustrations of capacity-building. They each show learning spilling out of the traditional organisation of public education and reconfiguring the boundaries of learning spaces. Learning occurs not simply within educational spaces but also in workplaces, communities, families, indeed in any place where there is interaction. This diversification of learning has been steered by government policy, coupled with a system of funding that acts as carrots and sticks within public and private provision. In Victoria, for instance, private training providers were invited to compete for public funds earmarked for the supply of training. Public training providers experienced falling income and constant pressure for productivity gains. This was realised by cutting costs and diversifying provision to take up new funding opportunities in work-based delivery of training and in overseas education export.

This diversification of learning is accompanied by a dispersal of teachers who take up learning opportunities and spaces in international, industrial and community contexts, as well as in more traditional education provider contexts. In some cases, this dispersal is a consequence of teacher's choices about where they will work. In other cases it is requirement dictated by their employers.

This dispersal of teachers is accompanied by a more particularistic focus in educational provision. In part this is dictated by funding arrangements, often governed through quite specific purchaser-provider service contracts. It is also a pragmatic response to the demanding work of innovating new programs which are tailored to particular groups of learners. Such innovation is made even more difficult when the teacher is expected to service new groups of learners with whom they are not familiar, and in non-traditional organisational contexts (ie. in workplaces rather than on campus). But particularism is also a consequence of the erosion of a universalistic public ethos which sees the work of public institutions in terms of service to the citizen-community. Such renorming is directly related to the way neo-liberal reforms have undercut the public sector and redefined the traditional role of government as the agency working on behalf of the citizen-community. Rather than nation-building, governments have attempted to orchestrate competitive advantage and this has meant picking winners rather than generalising social infrastructure.

In these capacity-building contexts it is clear that teachers are dealing with new learning contexts, cultures and relationships. For many who transit from existing public sector education and training, rather than new entrants, this means reinventing ways of working and reconstructing identities. These processes of self-formation entail substantial learning. It includes the learning of new knowledge, skills and ways of relating. It also entails the reconstruction of tacit knowledge, a process that commonly depends upon intensive dialogue, reflective practice and emotional labour. These educators are learning professionals. Their very survival depends upon their capacity to not only achieve quality learning outcomes amongst their students, but to learn themselves. They must quickly understand new contexts, produce new knowledges and apply it in innovative ways, deal with the unexpected, and with new challenges, disappointments and mistakes, and build relationships over and again as they move through different learning contexts each with their own structures of power. Such educators are learning professionals who are locked into a treadmill of ongoing learning. It can be exciting and rewarding, but it can also be an exhausting burden that spills over paid worktime, occupies every waking hour and subordinates life to work.

These new learning spaces do not only challenge teachers capacities to orchestrate learning and to self-manage their portfolio professionalism. They also press teachers towards the construction of collective capacity to support learning. Post-war public education constructed agency for learning through bureaucratic organisation and public sector employment. The teaching workforce, comprising teachers, principals and administrators, constituted a collective worker which realised nation-building through education and training. Teacher unions represented this collective worker in industrial and professional negotiations with employers and government, while also acting on behalf of individuals seeking protection from arbitrary treatment. Deregulation, decentralisation, marketisation and professional differentiation have undercut that collective worker and challenged teacher union's claims to be its representative. Instead, the construction of agency is decentralised. The work of forging a functional collective worker out of a group of teachers, administrators and managers must therefore occur in each particularistic learning space, customised to the power relations that create particular learning contracts, contexts and learner characteristics.

Working knowledge in a capacity-building organisation

A study of a small training private provider provided an opportunity to develop a more detailed analysis of the working knowledge required to sustain capacity-building organisation. This project was designed as an investigation of capacity-building, the knowledge management entailed in capacity-building organisation and the conditions that support such work. The project was funded by the Australian Research Council and conducted in cooperation with the registered training organisation (RTO), the case study site.

The case study entailed intensive data collection over a period of 5-6 days. The researchers engaged in informal conversations with staff, conducted nine formal interviews with selected individuals, conducted a focus group to test out preliminary analyses and attended a staff development day as observers. On the basis of these sources of data, together with documentary sources, a profile of the RTO was developed. This profile was discussed by RTO staff and used as a basis for dialogue with the researchers over analysis and interpretation. A longer in-house report prepared for the RTO has provided the basis for this analysis. The discussion of the RTO is structured in relation to the five themes identified as common features of capacity-building.

Capacity-building as spill over from traditional public education:

The RTO is a private company providing workplace training in manufacturing. It is owned and operated by its directors and staff, and operates within the regulatory framework for Registered Training Organisations defined by the State government in Victoria. As an RTO, the company can access public funds for the delivery of training and, in 1998-9, this source constituted 70 per cent of its income. The RTO was established as a private training company in 1994, following an industry-based project which was funded as a part of the late 1980s Commonwealth Labor government's micro-economic reform agenda. As the project drew to a close after 3 years, industry personnel, including the relevant manufacturing union, expressed a continuing need for the services provided through the project. It was the industry training board that suggested that the project staff should form a company and register as a private training provider. This history meant that the RTO opened for business with solid experience of workplace training in the industry, a clear educational philosophy which had developed through the project, and substantial networks across the industry's management, unions and industry training board.

The impulse behind the establishment of the RTO was clearly not, primarily, profit-seeking. The staff responded to industry demand and, particular, the demands expressed on behalf of learner's by the relevant union. In a sense, the formation of the RTO permitted the realisation of quite orthodox public education values, to support learning and extend learning opportunities for disadvantaged learners, because of the way

government had redesigned public education and training. Opening up the funding market permitted educational capacity that had been constituted and constrained within the constructed agency of public education to spill over into both new contexts and new constructions of collective educational capacity.

Capacity-building as dispersal of teachers:

The staff who worked together in the industry-based project, which preceded the establishment of the RTO, were seconded from TAFE and other publicly funded adult education providers. They shared a common professional history, having worked since the 1970s in public adult community education which was institutionalised in technical and further education as a consequence of the Kangan settlement. Significantly, they saw themselves as adult educators rather than as industry trainers, even though their current work was industry-based. They considered their educational philosophy, which was rooted in applied adult education, as one of their key strengths and an important element in their competitive advantage. This shared professional formation within public adult education was compounded by their longstanding personal relationships. Some of the staff had worked together for over twenty years. Most of the teachers and managers had been active members of the adult literacy community for many years and had common networks in adult literacy and community education. Moreover, their personal biographies showed similar features: family experience of working class life, early encounters with inequalities of power and opportunity, an acquaintance with practical politics over the kitchen table. They also shared a love of learning, actively engaging in reflective practice as part of their day-to-day lives, pursuing their own studies, and, in some respects, defining learning as a part of their practical politics.

Again, in relation to teachers, the RTO represents a dispersal of public education capacity. Teachers who were formed within public adult education have become reconstituted as a private agency. This step freed up their educational capacity, permitting staff to develop innovative forms of industry training which were unconstrained by the requirements of a being a teacher in a large multi-purpose organisation. This innovative educational practice has proved to be successful. It has generated learning outcomes that benefit shopfloor trainees and which are supported by those worker's union. It has proved sufficiently valuable to client companies to create return business. It has become well known within the vocational education and training sector for its exemplary practice and wider contribution to the field of adult and vocational education. But this step has also come at a cost. Becoming a private company meant that staff could no longer be members of the teachers' union which only covered public employees. Their relationships with the union movement were partly reconstituted in the form of organisational networks with the unions in the industry they served. These networks served to link the RTO with union activities and keep them informed but they do not represent the staff as employees within the RTO. The reconstruction of these teachers as a private rather than public agency also meant that these teachers became responsible for their own economic survival, both as a company and as individuals. This meant that they had an increased range of responsibilities relating both to the management of the company's business and their own careers and work lives because previously some of these responsibilities would have been delegated to their union or their public employer.

Capacity-building as particularistic provision:

The RTO's main business was the design, development and implementation of industry-based training programs. The hallmark of the company is its distinctive approach to training informed by adult educational principles. The RTO designs and delivers 'integrated training' that is enterprise-specific and which provides an holistic and contextualised program for learning. Its fundamental aim is the promotion of a more effective learning culture within client organisations and in other partner organisations. The company believes that learning within the workplace should be easier, richer and more effective after the RTO's involvement than it was before. Staff emphasise that this kind of training outcome depends significantly on their capacity to build effective relationships within each client organisation. The company's induction manual emphasises the commitment to 'developing context-based learning experiences and activities in each site and indicates 'a resistance to the idea that effective learning activities and training can be pre-formulated and imported into a client organisation'. These commitments are spelt out as a set of guiding principles which assert: the importance of input from people at all levels in a company, not just managers; the significance of forging good relationships within each training site; the creating within workplaces of a learning culture which empowers employees to deal with change; the need for workers/trainees to have some stake in the design and delivery of training; and an understanding that it is in the interests of all members of client organisations that training be holistic, contextualised and linked to the wider social context in which organisations function. This means that the RTO expects workplaces to be clean and safe, and to have a climate which is respectful, tolerant and non-discriminatory.

As these principles suggest, the idea that the RTO 'made a difference' in the lives of individual employees or in a company was an explicit value commitment which was built into its work practices. It is a familiar

moral position in public education but is being operationalised within a private education agency. While the major costs of training were funded by government, client companies contribution meant that the training was constrained by the economic imperatives of servicing particular clients. Consequently the RTO's provision was targeted at particular client companies, workplaces and groups of workers, but it was pursued in a way that emphasised the universal benefits of learning and the importance of creating conditions which sustain learning. Indeed, the public-private funding mix may be a significant factor in enabling and legitimising the hybrid character of capacity-building.

Staff talked about the way they managed workplace power relations in order to achieve the best possible learning contexts for the trainees, to institutionalise training and a culture of learning in companies, and to protect the integrity of training so that it was not usurped in partisan ways which did harm to trainees. This ethical position provided a powerful institutional endorsement of the value of learning and the work of the RTO in supporting learning. It also legitimated staff commitment to learning and helped to explain the intensity and passion with which they pursued their learning work. However, the universalistic ethics and particularistic provision created contradictions which had to be constantly managed in order to maintain the educational capacity of the RTO.

Capacity-building as the work of learning professionals:

The staff at the RTO worked to make a difference in client companies and in the lives of those they taught. In order to do this they engaged in pedagogic work within the client companies (with both trainees and other stakeholders) as well as consolidating their own capacities as teachers and learners. The core of this work lay in the orchestration and organisation of learning relations to sustain knowledge exchanges and the co-production of new knowledges.

This conception sees 'pedagogy' as a kind of knowledge management and a means to learning. As Lusted elaborates, the challenge of developing a pedagogy of learning requires us to become conscious

... of the conditions which produce, negotiate, transform, realise and return [knowledge] in practice [ie. learning]. What pedagogy addresses is the process of production and exchange in this cycle, the transformation of consciousness that takes place in the interaction of three agencies - the teacher, the learner and the knowledge they together produce (Lusted, 1986: 2).

As he stresses, learning is not a consequence of any one of these agencies by themselves but an outcome of their interactive effects which serve to 'co-produce' knowledge and other outcomes (Connell, 1995). Learning is constituted within knowledge transactions that are orchestrated through the purposeful design and realisation of pedagogy. Learning is a distinct form of work which depends upon the further pedagogic work of carefully constructing pedagogic contexts, relations and processes. This work not only facilitates learning but encourages 'noise-free' learning, uninterrupted by cultural dissonances, because pedagogy is embedded within particular groups and networks (Connell, 1985).

At the RTO, the work of deriving curriculum out of the workplace in the client company helped to promote learning which was unimpeded by unfamiliar terminology and a lack of understanding of the trainees experience of work. Teachers emphasised that their role was not to provide knowledge but to help trainees recognise what they already knew and to systematise useful knowledge in ways which would help them. One teacher described her role as 'getting the machete out' and 'clearing out the debris' so that the trainees 'start sifting, sorting through all that undergrowth to work out what are the most important bits'.

Commonly, the staff extended their pedagogic work beyond the trainees to other stakeholders in the client company. They recognised that they were brought into the company by management who paid for their services. This exchange relation could constrain the work done by the RTO, particularly when managers had very fixed ideas about how training should occur. In such situations, and when the RTO felt that company conditions would limit training, they turned their pedagogic capacities to inducting managers into alternative ways of training. This pedagogic work also extended beyond specific companies. The staff took their experience of workplace training out into the wider field of vocational education and training policy and practice. Constructing contexts and conditions which would enable knowledge transactions and co-production to extend learning in VET professional and policy communities.

Capacity-building as the construction of pedagogic agency:

Pedagogy was the *modus operandi* of the RTO. It lay at the core of the RTO's work with trainees, companies and other individuals and agencies. Pedagogy was also fundamental to the construction of contexts that facilitated the staff's learning. But while individual staff clearly had and exercised individual pedagogic

knowledge and skills, their capacity to act pedagogically rested upon the construction of a collective pedagogic agency through specific organisational practices. This collective agency brought different functions together, locating individuals with different knowledges, skills and dispositions within a structured and durable division of labour. The CEO was quite explicit that building this pedagogic capacity had been an important motivation in the formation of the company:

When I came here ... I had just one agenda. And that was to get the best possible deal for the workers. I found the best teachers I could find. They were miles better than I ever was. Brilliant people, a lot of them. Then I picked on the best teaching practice that came out of their teaching and I promoted that. That's where it came from. So I consciously moved the money around so that that teaching and learning line would come through. I consciously did that. It was definitely my goal.

The construction of collective pedagogic agency depended partly on further pedagogic work directed this time towards the in-house learning by staff, organised through ongoing informal dialogue, reflective practice, support for formal study and RTO-based research, and regular staff development days. This engagement affirmed the shared goals, moral principles, organisational roles and responsibilities and social bonds which tied the staff to each other and the organisation.

Collective pedagogic agency also depended on sustained professional work that consolidated the linkage between scarce resources of knowledge and expertise and the scarce resources of status and reward as a basis for maintaining the occupational community formed within the RTO and its wider networks (Larson, 1990). In a market context the RTO had to carefully manage its income and its outlay, particularly staff time. The division of labour between the roles of teachers, managers and administrators depended upon clear understandings of the way each party contributed to the overall outcomes that the RTO worked towards and realised. The organisational structure of the RTO was flat and, while staff recognised that there was a 'boss', they turned to individuals with specialist expertise when they needed advice or assistance. This specialist expertise was acknowledged in job designations but was also known informally through close interpersonal relationships.

The staff extended the principle of 'noise-free' pedagogy to their managerial work, developing procedures which were familiar to their clients in industry and scrupulously adhering to reporting and accountability requirements related to their use of public funds. The management of staff in the RTO had a strong learning emphasis, supporting staff to take on new responsibilities and experiences as a way of extending the knowledge-base of the organisation. This applied not only to teachers and those who were responsible for the pedagogic work associated with the delivery and management of workplace training but also to office staff who were encouraged to gain credentialled learning. There was also an active recognition of the work required to link the company's knowledge-base to regular income sources. Promotion of the company was an accepted part of the work. Staff were encouraged to present conference papers and publish on their work. Managers positioned themselves to be seen and have a say in wider professional and policy contexts. Networking was recognised as a critical element in the company's survival, bringing public recognition of the pedagogic agency being constructed and returning income through training contracts and other income generating activities.

Finally, the construction of pedagogic agency entailed political work. This was work that was oriented specifically to the management of power relations, in and beyond the company, in order to create conducive contexts for the construction and realisation of the distinctive pedagogic agency being developed. Within the RTO, this work related largely to the construction and affirmation of shared goals and the negotiation of strategic directions. At times the 'buck had to stop' and there needed to be an organisational structure which gave this facility which could be used when necessary. There was also a need to manage the employment relations between staff and the RTO, and to deal with the day-to-day dramas which exist in any workplace. The appointment of new staff was always a complex matter because they were becoming a part of the collective pedagogic agency being constructed through the RTO. Individuals with different philosophies and ways of working would not only find it difficult to fit in but could undercut the capacity of the RTO as an active agency. These issues required a political awareness of both the work of the RTO and the fragility of any capacity for collective action. The aim was not to appoint clones but to find people who could fit in and advance the collective project being pursued.

There was also political work in managing the relationship between the RTO and its wider environment. This meant managing the company's public image in relation to its private, in-house, commitments, supporting staff to take an ethical approach in their pedagogic work in client companies, and contributing to broader public agendas and debates about the purpose and character of vocational education and training. Again, the RTO worked towards the construction of agency which was oriented towards the realisation of particular social goals which had much in common with traditional public service ethos. Their goal was to

work against inequality, domination, and excess managerial prerogative, within the constraints of economic sustainability. Such work required a capacity to read the political in everyday situations and to strategically judge the scope for action.

Working knowledge to sustain capacity-building

These general and more detailed descriptions suggests that educators require a complex and sophisticated knowledge base if they are to sustain capacity-building in education and training. It can be conceptualised in terms of three major elements.

Firstly, it is important to recognise that capacity building arises as neo-liberal reforms presses educational provision and professionals to spill over into privatised or marketised learning contexts. In the examples presented, educators worked hard to retain substantial linkages with the traditional public sector ethos that they embodied as a consequence of their personal histories in the dominant form of educational provision, public education. But their commitments to learner's learning, to public sector values, to inter-agency cooperation and to shaping education as a citizen-right was given an entrepreneurial inflection. Capacity-builders actively sought out opportunities to extend and develop learning capacity because there were no guarantees in relation to their economic base which was necessary to support them individually and occupationally. Capacity-building therefore called for a sophisticated understanding of past educational practices and the rules governing contemporary practice. This knowledge base enabled them to see the way their local activities linked with 'big picture' changes which created changing frameworks of constraints and opportunities. The challenge for the capacity-builder was to make strategic judgements about the value of old and new practices in education and training, and the viability of different courses of action for advancing valued traditions in new contexts.

Secondly, these complex contextual judgements, coupled with the challenging work of shaping educational practices to the demands of new clients, contexts and cultures, meant that the capacity-builder had to develop high levels of pedagogic, professional and political knowledge in order to sustain learning and ensure the ongoing viability of the learning unit (the RTO, a department within TAFE, a professional doctorate program). It requires a working knowledge which understands not simply pedagogy and the orchestration of learning but also the professional and political work of organising and managing a viable and directional capacity for collective action --- a political project with learning at its core. As the illustrations suggest, there is considerable interaction between pedagogic, professional and political work but they can be distinguished analytically because they have different focuses. Pedagogical knowledge addresses the organisation and management of learning as a process of co-production between learner, teacher and the knowledge resources that are shared. Professional knowledge encompasses a concern with occupational survival and attends to the maintenance of a secure knowledge-base which is sufficiently valued that it can be used as the basis for exchange in return for income. Professional knowledge demands a continuing concern with the economic and political basis for the occupational group, ensuring a scarcity of knowledge and expertise alongside the promotion of that knowledge and expertise as a valued community resource. Political knowledge is necessary because it provides a basis for understanding and therefore acting strategically in relation to power relations at every level: within the unit, with clients, with larger agencies and with government. Political nous is critical if the minefields of stakeholder politics are to be negotiated successfully.

Finally, the realisation of viable capacity-building demands the construction of collective pedagogic agency. There is a distinctive knowledge base for this work which recognises, following Clegg (1996), that agency rests upon three levels of organisation:

- (1) the agentic level where specific agents engage in practical political work directed consciously towards a defined and directional political project. As Touraine (1981), argues, this work is advanced by clarification of the identity of the collective actor, its relationships with perceived antagonists, and the stakes that are being contested in this politics. This work of constituting a project that can galvanise guided and coherent action towards a specific goal depends upon both integrated pedagogical, professional and political knowledge and its practical application to the shaping of a shared agenda, decision-making, the structuring of organisation and the management of a division of labour.
- (2) the institutional level where power is sedimented into institutional rules, resource distributions, routines and rituals. This organisation of power, constituted through the structured play of power relations, creates contexts for action and for the exercise of agentic power. Knowledge of these 'rules of the game' is critical for capacity-building because it provides the framework for strategically opting to play within the rules or to work to change the rules.

(3) the dispositional level where power and knowledge is embodied in particular moral positions, normative frameworks and ways of working. This dispositional level is evident in an occupation's tacit knowledge. It is lived, breathed and taken-for-granted, except when it is problematised by some event. This knowledge is the cultural ballast which keeps collective agency on track in an almost routine way. Things just happen as if there was an institutional autopilot. This knowledge base develops over long periods, deposited as a result of biography, lived experience in particular social and occupational settings, and personally significant cultural encounters that encourage reflection, learning and the reshaping of ways of being. The construction of a collective agency requires the formation of this kind of cultural substratum but, as Offe (1996) argues, it cannot be worked up through administrative fiat. It may be shaped by agentic action but intervention is unpredictable because, more than any other level, the socially located individual becomes the arbiter of such tacit knowledge through idiosyncratic individual appropriation which is not always consciously enacted.

Recontextualising capacity-building: prospects and paradoxes

Significantly, in the old centralised model of education and training provision, much of this knowledge-base and capacity for action was orchestrated through collective agencies, particularly the bureaucracy, unions and later teacher professional associations, and teacher education provision. These middle level agencies, located between government and individual teachers and their immediate workplaces, carried the weight of work related to the construction of a collective pedagogic capacity that sustained education for nation-building. In our post-welfarist era, these middle level organisations have been undercut and marginalised as the collective educational project has been redefined in individualist private investment terms. This shift has meant that the enterprise and its specific organisational units must take on the task not only of teaching but of occupational orchestration at agentic, institutional and dispositional levels. This is a huge and difficult work load which, because it is decentralised, loses any possibility of economies of scale.

As the illustrations presented here suggest, capacity-building is currently a niche response to the strictures of neo-liberal reform in education. Public school education still takes two thirds of the school age population. Public TAFE Institutes accommodate over 75 percent of vocational education and training enrolments, with only 9 per cent accommodated by private providers. There are still only two private universities in Australia, although this is under pressure from the privatising impulse of some of the 'sandstones' and government's management of proposals for entry by non-national university provision.

While capacity-building initiatives may be interpreted as a generative and self-managing innovative response within the spaces opened up by the changing educational landscape, they can equally be seen as a response to impossible or destructive working conditions which leave individuals with no alternative but to spill out beyond the frames of public educational provision. Probably, there is an element of both in most individual's choices but stepping outside public education has costs. What is being lost is a broadly common cultural substratum across a large collective agency which can support mass educational provision and provide, for the collective educational workforce, supporting relationships, protections, and a sense of common cause which helps to ameliorate alienation that seems to accompany contemporary individualisation and social fragmentation driven by neo-liberalism and wider social changes. The disconnection of the RTO from the teacher union is an illustration of this point, although this company was able to create further network connections with the union movement.

Given these complex costs and benefits associated with capacity-building, is it really a viable direction for the future, as so many policy makers and researchers seem to suggest? Could capacity-building be generalised as a mass pattern of educational provision? It seems unlikely, particularly when governments are unwilling to substantially increase the resource base of education and training and industry keeps shedding the costs of workforce development onto the public purse. This resource issue is critical because it seems that capacity-building substantially increases the workload on staff and increases the knowledge base they require to work this pattern of provision successfully. It seems that these lived resources are sustainable in small organisational units where strong interpersonal relationships can support the difficult pedagogic, professional and political work necessary to be a capacity-builder. Recent government policies aimed at reducing the influence of middle level agencies in the construction of pedagogic capacity, coupled with the small size of viable capacity-building units, means that at both a directly pedagogic and infrastructural level there is reduced opportunities for economies of scale. This can only increase costs per unit and is likely to make mass capacity-building impossible.

Yet, despite the down sides, capacity-building has attractive features and certainly seems to be able to generate quality educational outcomes. As a way forward in educational reform, it offers some benefits but only if the costs can be addressed. The challenge probably lies in the reconceptualisation of the work associated with constructing pedagogic agency and the reintegration of middle level agencies as an infrastructural support for capacity-building. This suggests that teachers may be able to focus on teaching

again, bureaucracies or other administrative units may be able to focus on the provision of sensible infrastructure, unions may be able to reconsolidate the cultural substratum that supports teaching capacity and teacher education may be turned to developing the pedagogic, professional and political knowledge which can support teachers and the infrastructural workers who support them.

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LINKS BETWEEN CORPORATE AND ACADEMIC RESEARCH: SOME SURVEYS

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Introduction

Financial constraints are forcing post-secondary institutions in Australia (and elsewhere) to look to the corporate world for economic help to sustain their programs. While most academic courses are vocational in some sense, and while internships, work experience and co-operative education are not new, the relationship between corporate and academic research in Australia has often been uneasy, with each side jealously guarding its turf. The discussion points in this paper are based on the authors' involvement in (a) surveys of industry, (b) research partnerships between industry and academic mathematicians, and (c) relevant comments in the literature.

The initial survey took place almost thirty years ago, and its purpose, like that of subsequent surveys, was to obtain industry input into academic planning and to clarify the different imperatives which govern corporate and academic decision making (Shannon, 1973). The research partnerships described in the paper exemplify some of the principles in successful research linkages between clinical developments in hospitals and the application of appropriate techniques by academic mathematicians. The comments in the literature come from participants in Australia's Business/Higher Education Round Table which has become an increasingly strong voice in facilitating research linkages between academe and the corporate world, as well as a partner with the Commonwealth Industrial and Scientific Research Organisation in R&D Leadership Programs.

Academic and corporate research are interdependent and the differences need to be recognised, and harmonised, rather than eliminated, when links are developed. Thus corporate research is characterised by team effort, time constraints, financial goals and by projects which may not reflect an individual's interests. These are not incompatible with academic research, though a growing tendency to discourage curiosity driven research by academics may actually inhibit the unique contribution of the academic to corporate research, since it is often the serendipitous discoveries which lead to breakthroughs. Commercial-in-confidence intellectual property can be a problem, but it, like many of the other issues in the development and maintenance of successful links between corporate and academic research, are predicated on education that prepares students for lifelong learning.

Academic freedom and university autonomy

The risk of undue external corporate influence on the autonomy of universities is a matter of concern for academics who fear the erosion of traditional values of scholarly excellence and academic freedom. Sections of the professorial caucus complain vociferously about selling academic freedom down the drains of commerce. As one academic put it: "Industry cannot prescribe what the universities should teach or do. This is the inalienable right of universities world over. It is a trivialization of the potential of the university to regard it as standing in relationship to industry as a supplier to a client,..." (Sekhon, 1985).

Another academic reminded us what are the central concerns of university education: "For a university to produce professional men and women may seem a sufficient part to play in the affairs of a nation. Yet such a task is its render unto Caesar the things that are Caesar's. For, beyond professional training, a university has higher duties and nobler aims — a concern with goodness and truth and beauty, with the training of minds, with the guarding and transmitting of intellectual and moral traditions." (Sekhon, 1985)

Against this one must set the views of government and industry leaders that "universities are not monasteries wherein a man may seek peace by renouncing interest in the world's affairs. They are not homes of privilege provided for great scholars who have achieved renown. They are costly institutions, largely paid for by the taxpayer and they exist to give services of vital importance to their countries and to the world."

In the difficult economic times that currently obtain, industries will be unwilling to provide funds for research in universities unless they have the sanguine expectation of a richer harvest of returns. Universities and other tertiary institutions should appreciate that academic freedom is an expensive luxury that the corporate world may be reluctant to support. There can be a real conflict between academic freedom and corporate funding. According to Singh (2000), the practice of commercial confidentiality is at variance with the academic tradition of the free exchange of idea. As a rule, a pre-condition of corporate collaboration involves a certain amount of confidentiality of research techniques or results. The power of the purse can bring with it the power to interfere.

External funding and basic research

A major cultural shift is taking place in universities. As Chubb (2000) indicates: We are moving rapidly from an environment that was characterised by the availability of funding for research that *we* wanted to do to one where the balance will tilt towards the availability of funding for research that *somebody* wants done."

The corporate-academic interface is changing as there is a significant body of opinion that what is at stake in the present economic climate is sheer institutional survival: academics are having to depend increasingly on corporate and private sources for funds. As a consequence of the severe limitations on public funds being available to public universities, the focus on postgraduate training to accommodate the research and development needs of industry has sharpened in recent years. Fiscal pressures are forcing universities "to become surrogate problem-solving institutions", in the words of de Correño (1999). Virtually all universities provide encouragement for appropriate departments to provide services to the corporate world and for individual staff to engage in consultative activities.

Institutional inertia and rigidity of thought about the function of tertiary educational providers have undergone a dramatic change as a result of the financial austerity facing them. Academics are experiencing an especial urgency for education to be recast into a structure more in sympathy with, and responsive to, the needs of the corporate world.

Yet this should not mean that academic institutions simplistically assume the trappings of a commercial enterprise. Academics are "primarily loyal to their function of acquiring and disseminating knowledge, to certain systematic methods of enquiry, and perhaps to a particular discipline. This goes beyond devotion to a particular university... What is at issue is the damaging effect on scholarship of the current obsession of some higher education leaders with a particular, narrow management ideology. Not only is that ideology unsuitable for universities, it is not even practised in big business corporations where the flattening of hierarchical structures and involvement of staff in decision-making is considered to be the optimum for efficiency and progress. ... Unfortunately, 'management' and administration have taken on a life of their own, when their role should be to facilitate the functions of the university." (Hunt, 2000).

Corporate and academic research

In this new order the old dichotomy of basic and applied research has outlived its usefulness if it leads to separations rather than distinctions, if only that experience has shown that the solutions to future problems originate from fundamental basic research carried on by scientists with no practical goal in mind. According to Slezak (2000), "the most useful invention, the computer, arose from Alan Turing's work in the foundations of mathematics which had no practical value or interest at the time".

There must be a sowing for a harvest. It is therefore imperative that nothing should be done which handicaps the progress of outstanding work which, while appearing remote from practical application, makes major contributions to fundamental developments. The existence of this core of achievement, which properly receives international acclaim, is essential to the morale and general well-being of academics. Any attenuation would deflect universities from one of their fundamental concerns, namely making significant additions to knowledge. On this point one senior academic remarked that "if we do force universities to serve as primary or essential ends anything other than the training of scholars and the achievement of learning, we will to that extent weaken the essential character of universities and go a long way toward repudiating a great accomplishment ." (Sekhon, 1985)

Slezak (2000) argues that "the traditional ideals of a liberal education are devalued usefulness is conceived in the narrowest commercial terms. Besides being impoverished, such an outlook is misguided even from the most pragmatic point of view through its harmful consequences for education and research". de Correño (1999) asserts that "few would argue that MIT was integral in the development of Route 128 or that Stanford was the key to the success of Silicon Valley."

Academic and corporate partnerships, particularly in research projects, can be harmonised with mutual respect for each other's goals and joint appreciation of each other's scope. Readers will have examples of such projects in mind. An illustration of the interplay of corporate and academic research is provided in a study of diabetes mellitus (DM) in which one of the authors has been involved for more than twenty years (Shannon *et al*, 1996; Nguyen *et al*, 1997).

Figure 1 is a schematic plan of the major clinical issues (shaded boxes). The study has involved a partnership among academic institutions, hospitals and industry.

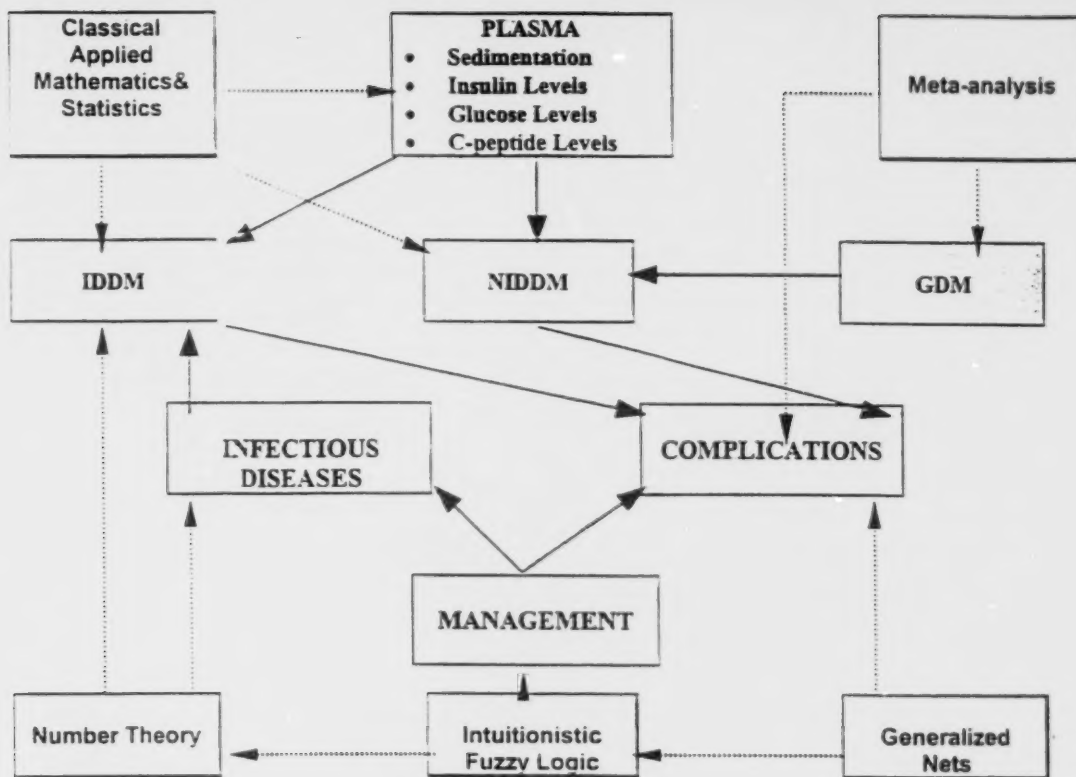


Figure 1: Academic-Corporate Research Partnership
 Key- IDDM: Insulin Dependent; NIDDM: Non-Insulin Dependent;
 GDM: Gestational Diabetes Mellitus

The research partners were University of Technology, Sydney and the Bulgarian Academy of Sciences, Sofia; the University Hospital of Wales, Cardiff and the Prince of Wales Hospital, Sydney; Novo Nordisk A/S, Copenhagen and TCG Information Systems, Sydney.

The unshaded boxes refer to the sources of the mathematics utilised in various facets of the research. Much of it would be classified as very pure mathematics with foundations in curiosity driven research. It is in this latter aspect that university researchers can bring a unique quality to corporate partnerships, and it is something which smart companies, with an eye on the horizon rather than next week, really value. It reminds us that ambitious targeted research projects can live beside traditional scholarly creative enterprises.

Corporate research requirements

There often appears to be a mismatch between the priorities of universities and the interests of industry. In many ways the characteristics of industry and academia are almost antithetical, arising from their different missions. Work in industry is likely to suffer from inflexibility, particularly in having to work within time and budgetary constraints. These are becoming very familiar to university deans. The corporate world can allow little freedom to follow one's interests: its overarching objective is profit. Most corporate research is a multidisciplinary team effort in a milieu of compromise — the search for an optimum answer within time and cost limits. The core of corporate research units are the technical and personal attributes of the staff. Employers commonly report that the research training experience is often too narrow in its specialisation and not consonant with their needs and expectations.

To facilitate the recruitment of graduates suitable for the world of corporate research, Sekhon (1989) asked employers from 77 companies to indicate the relative importance of different qualities of doctoral graduates in their organisation. The overall impression is that the corporate research mathematician will have the mathematical skills of modelling and problem-solving, allied with the personal qualities to enable them to work in the corporate environment.

An open response which solicited improvements to PhD education for the world of corporate research included the following suggestions:

- Broad-based PhD education
- Supervisors with corporate experience
- Insights into the practicalities of the corporate world
- The inculcation of proper attitudes
- Part-time or sandwich pattern of attendance
- Selection of research topics from problems in the corporate world.

It was suggested that research in a highly specialised subject be reduced and substituted with coursework, which should be in a range of different areas and include some exposure to principles of management, particularly project management. Approximately half the graduates in Sekhon's study felt more emphasis should be placed on coursework, with only five per cent indicating more emphasis on dissertation.

It is interesting to observe in passing that almost forty years ago, the *Martin Review of Tertiary Education in Australia* commented that: "It is desirable that more formal coursework be provided for candidates for higher degrees than is at present the case in many departments" (in Kiley and Mullins, 2000).

More than half the graduates indicated more training in team research was needed and nearly two-thirds indicated a preference for more analyses of and exposure to industrial problems. A similar majority indicated access to an industrial environment as a possibility for change in the future. Thus Sekhon advocated a different form of doctoral education to ensure that some of the generic qualities listed in Table 1 are accommodated.

**Table 1: Employers' Ratings of Technical & Personal Qualities of PhD Graduates:
Expressed as rounded proportions**

Technical and Personal Qualities	N=77	Very Important	Important	Not Important
Effectiveness in problem-solving and modelling		8	2	0
Ability to adapt quickly to new problems and challenges		8	2	0
Understanding the realities of industrial environment		7	3	0
Good oral and written communication skills		7	3	0
Motivation towards solving company problems		6	4	0
Appreciation of non-mathematical fields		5	5	0
An incisive, analytical mind with a flair for detail		4	6	0
Identification with company aspirations		4	5	1
A pleasing personality that facilitates research		3	7	0
Training in the theory and application of advanced mathematics		2	6	2
Ability to extend and develop mathematical methodology		2	6	2
Familiarity with mathematical literature		0	6	4
Source: Sekhon (1989)				N=77

The incorporation of many of these suggestions can be made with a mixture of coursework and research (Trigwell *et al*, 1997) and industrial internships (Shannon and Sekhon, 1997), so that there is a merging of corporate and academic research in some, but not all, areas.

Concluding comments

Misunderstandings exist of course. Employers are critical of graduate emanating from universities, lacking, as they do, some of the qualities referred to earlier. Grant (1996) underscores this: "All too often research students are given little or no training in project management and many have poorly developed work habits and discipline in matters such as report writing and good command of English".

At the same time there is a feeling among academics that industry itself does not really know what it wants when it comes to research. Bilateral arrangements between universities and industry can do much to dispel misunderstanding, mistrust and indifference. The academic and corporate worlds should be closely inter-related, but distinct parts of a single continuous facility.

In the new, altered universe, where changing realities require a revised vision, new skills, new learning pathways and new learning options are emerging. Corporate universities are now on the scene even in Australia, such as the Securities Institute which offers a Postgraduate Diploma and a Master of Finance and Investment. Many companies are now Registered Training Organisations providing accredited qualifications within the Australian Recognition Framework. These can respond effectively to the market place, preferably with the co-operation of university and college providers, such as between Coles and Deakin University.

Many corporations are developing in-house programs, courses and structures to increase the skills-base of their employees. Goldsworthy (2000) indicates that "Motorola University is a well-known example of this sort of initiative". The aim of corporate universities is to form partnerships with tertiary educational institutions to provide in the words of Heine (2000) "a formally recognised and accredited qualification with a specific organisational orientation and branding".

As foreshadowed in *Campus Review* (2000), "Microsoft, the world's biggest software company is expected to join with Rupert Murdoch's News Corporation and the Universitas21 network to deliver online postgraduate education around the world. The aim would be to offer custom-designed postgraduate courses in business and information technology to individuals around the world." This linking of Universitas21 with the Murdoch empire and the growth of Internet providers are all signs of rapidly changing times in an environment of shrinking government support for tertiary education in relative terms in many parts of the developed world. The human capital and material resources required for research are so precious that it is in the interests of all parties to form strategic partnerships which acknowledge and respect the scope and limitations of all partners.

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Introduction

The phrase 'work-based learning' has today become something of a slogan, which takes on different meanings according to its immediate context. Barnett (1994) rightly acknowledges that there is probably no single word or term that can capture neatly the sense of a concept, as any single word or phrase is potentially apt to become a slogan and in its turn to become another binding framework. Whatever vagaries there might be in the use of the term, it is clear that there is a growing need to appraise the whole notion of work-based learning and to explore the theoretical principles that underpin this complex and ambiguous concept. Of paramount importance is the need for clarity.

This paper begins by locating work-based learning in the context of Higher Education (HE) as we move forward into the 21st century. It discusses how it took place in one new university in the UK, and considers some of the benefits promoted as well as some of the challenges encountered. The detail will await the analysis, but first it will be essential to locate the concept of work-based learning in the broader debate of what constitutes knowledge, a concept central to any discussion of education. The vexed and age old questions about the nature and purposes of education remain and the paper will draw on theoretical models of learning to inform debate.

The role of universities will also be considered, given the continuing economic and social change, the massive impact of the Internet and technological links between HE and employers and the demand for increasing flexibility. In relation to work-based learning, the role of the employer has not received much attention. In particular, the role of the powerful large employers who set up their own extensive training and even corporate universities can no longer be neglected. (Bouchard, 1997). Its principles - if indeed they exist - need to be clearly articulated and understood by all stakeholders in the interests of achieving a robust conceptual grasp of these seminal issues. These stakeholders include HE institutions, Examining Boards, students, parents, tutors, employers, the Department for Education and Employment (DfEE) and its various serving bodies such as the National Training Organisations (NTOs.) and the University for Industry (Ufi). Armed with clear principles on work-based learning, procedures will follow.

Work based learning and knowledge

Traditionally, universities have defined a theory of what constitutes important knowledge. In order to understand why this might be, and the implications, if any, for work-based learning, it is necessary to look briefly at the history of education in this country. The Education Act 1902 brought about an unprecedented increase, not only in numbers and sizes of schools, but also in examining bodies. This gave rise to a plethora of examinations, all conducted at various levels for differing purposes. The curriculum prescribed for these new secondary schools (later to be called grammar schools) was based entirely on that of the independent schools. Thus, an academic bias was firmly given to compulsory schooling and was to influence all subsequent thinking on the question of secondary education for all.

In 1949, the universities defeated the well-intentioned aim of extending the schools' freedom to shape its own curriculum, by making their matriculation requirements as five 'GCE' passes, including two at 'A' Level. Pupils, teachers, employers, parents, further and higher education conspired to defeat it, seeing anything practical, technical or vocational as inferior to traditional academic qualifications. This separation of the academic from the workplace has pervaded the debate ever since.

Given this longstanding belief in the superiority of traditional academic education and learning, one could arguably predict that '*engaging individuals, employers and communities in meeting future learning and skills needs*' (NTO response to Post 16 White Paper, October 25 1999), would be met with resistance. In calling for a sea change in attitudes among employers, individuals and institutions of further and higher education, work-based learning inevitably raises questions about the nature of knowledge. As Boud and Garrick (1999) state:

Misapprehensions of industry bodies, employers, trade unions, formal education institutions and academics- on whether workplace learning should or should not be considered as 'valid' knowledge are now being dramatically tested. Work based learning is now firmly on their agendas and there is no returning from here. (Boud and Garrick, 1999 p229)

Erault, (1994), Polanyi (1967) and others would have questioned the superiority of formal learning over tacit and informal learning, lending further credence to the notion of learning in the work place. This shift by intellectuals to acknowledging the validity of learning on sites other than universities is an important one for the modern Academy, reflecting greater openness to explore its potential.

Another radically new way of looking at the concept of learning 'legitimate peripheral participation' is attracting international attention, particularly as it relates to work-based learning. Here, learning involves '*participation - of both absorbing and being absorbed in the culture of practice*'. (Lave and Wenger, 1991 p95) This 'situated learning' theory defines learning as '*a way of being in the social world and not a way of coming to know about it*' (p.49). It places more emphasis on '*connecting issues of socio-cultural transformation with the changing relations between newcomers and old timers in the context of a changing shared practice*' (p.49). It would be an oversimplification to suggest that this is reminiscent of the age-old practice of 'sitting beside Nellie' currently advocated for Modern Apprentices working toward a university qualification by work-based learning. Reflecting on experience to turn it into learning was the most challenging factor. Convincing them of the potential benefits of keeping a reflective log, when they were used to working towards National Vocational Qualifications (NVQs) proved very difficult.

The relationship between reflection and learning is pivotal, since reflection lies at the very heart of most university provision and plays a major role in work-based learning. (Honey and Mumford, (1992), Kolb, (1984), Schon (1991). As Boud (1998) states

there is a growing body of work associated with critical reflection and reflective practice. much more needs to be done in order to address the plethora of conceptual issues which such activities confront. (Boud & Walker, 1998)

He suggests that there is sufficient substance in this area alone to give rise to major new areas of research arising from the challenges. In the rapidly changing contexts of HE, the question remaining is that which considers what counts as knowledge. In pursuit of clarity and understanding, the following hard questions need to be asked. What will be the role of HE in the future and what are the implications for work-based learning. Woodhouse states:

As institutions of higher education are losing their (near-) monopoly of the production, storage and transmission of knowledge and information, their credentialling function will assume even greater importance. (Woodhouse, 1998 p268).

Certainly the debate is closely related to debates going on in HE in the UK around adult learners and lifelong learning. The new National Learning and Skills Council is acting as a catalyst to promote '*preparation for working life, updating of skills, and lifelong learning*' (Oct 1999 NTO response).

Employer perceptions of work-based learning:

If confusion abounds around the nature of work-based learning, then it is not surprising that the question of accrediting it in HE is fraught. Significantly, concerns about status and currency were voiced in the final evaluation of the DfEE funded theme of work-based learning back in 1996.

In the perceptions of some employers, graduates with work-based degrees were somehow less 'professionally' developed than their conventionally qualified counterparts. (Lancaster CSET 1996, p11)

The report concedes that this might have been an unfair perception, coloured by a certain suspicion of work-based learning reflecting an unrealistic link between traditional academic practice and good managerial decision making. A way of tackling this apparent suspicion might well be to involve employers fully in the process. The importance of better considered employer involvement has been stressed by NTO. They state:

We need to move beyond the notion that employer involvement in education and training is about either token involvement or seats on boards' (NTO 25 Oct 1999)

Grappling with uncertainties and conflicting demands, universities are being challenged as never before to find a way of providing change with stability. Of necessity, clarity must be sought about the nature of work-based learning and its underpinning principles. With this aim, this paper now explores how work-based learning was implemented in a post 1992 UK University. In the interests of confidentiality, the post-1992 and pre-1992 universities will be referred to as University A and B, respectively. In terms of what constitutes best or even good practice, there can be no one model. There may be value, however, in taking one specific case study - Learning Power - to reflect on the experience gained and analyse some of the challenges faced in work-based learning.

Case study: learning power:

Given the highly problematic nature of work-based learning and its accreditation, it might be anticipated that many universities, particularly the old ones would register little enthusiasm for it. Predictably, more interest has come from the new universities. University A is one such university, which has a long history of engagement with work-based initiatives. It describes itself as an '*employer-led University of applied learning*' whose mission statement is:

to engage in teaching and research of the highest quality and of value to society, which will enable the greatest number and widest variety of people to develop the capability to shape their future and to contribute to the development of their organisations and communities. (University A, Mission Statement)

Learning Power was born of a chance meeting in 1996 between the local Training and Enterprise Council's (TEC) Education Manager and University A's course leader for the MA Education. Both were agreed that the imminent pilot and the MA Education had much in common. The TEC had secured further DfEE funding for a three year WBL pilot Scheme and invited University A and B to participate. The TEC intention was to provide bursaries to learners out of the DfEE funding. The universities would receive no development funding, since this had been allocated to an earlier pilot at University B.

After approval from the tutor's Head of School, for her to take the pilot forward, on behalf of University A, she met frequently with the TEC and with her counterpart at University B. The TEC intended to fund 50 'learners' a year, for three years, from 1997-2000. The two universities would each have around 25 learners annually and would confine themselves to three Schools each to enable lessons to be learned before expanding it further.

The TEC commissioned York Consulting Ltd to undertake an external evaluation, published in 1999. It stated:

Learning Power is a work-based Higher Education programme incorporating the accreditation of prior learning and experience. It is a unique approach which aims to provide access to higher qualifications to employed or self employed individuals who may not possess formal entry qualifications, but can demonstrate capability. It enables these learners to negotiate their own learning programme structured around work based projects. (Learning Power Evaluation, York Consulting Ltd, 1999, p1)

There were four stages to the programme.

The **enquiry stage** consisted of two evening meetings at the TEC to explain the aims and nature of Learning Power to potential learners and their employers/mentors. The Learning Power Tutor and the Education Manager of the TEC encourage learners to explore their personal and professional aims, which will meet employer needs.

The **exploration stage**. In University A, learners were enrolled in the School of Professional Education and Development (PED) on a work-based learning module. The tutor sought to empower, build confidence and remove fear of failure. The role also involved identifying learners' needs and allocating specialist support tutors. The tutor acted as a mentor to learners and staff, designing a portfolio of evidence for Accreditation of Prior (Experiential) Learning (AP(E)L), an initial learning contract and personal learning reviews. The tutor encouraged their exploration of preferred learning styles and processes, and the keeping of a reflective log diary journal.

In the **development stage** specialist tutors and learners developed the final learning contract. Whilst supporting subject specialists, liaising with employers and action learning groups, the Learning Power Tutor gave pastoral support. The external evaluation considered the Learning Power Tutor's role to be a key contact point for subject specialists and learners, and important in liaising, driving and troubleshooting.

In the final **demonstration stage**, learners presented their agreed evidence and an analytical reflective statement articulating significant lessons learned.

Learning Power in Practice

Externally, Learning Power was seen to be highly successful. The first student to gain a degree was this year awarded first class honours. Examiners see the quality of work submitted from the students as exceptional. The scheme was awarded the national award for creativity and innovation in teaching and learning in HE in 1998 by the National Organisation for Adult Learning and the Committee of Vice Chancellors and Principals of the UK. Articles in the Times Higher Education Supplement and elsewhere aroused national and international interest.

However, it became clear, early on, that Schools from University B were unwilling to be involved in the pilot scheme. The evaluation questioned why this should be.

This relative lack of involvement was raised in the interview at [University B] (5.32). Tutor perceptions of the reasons for this centred on cost; it was felt that departments were unwilling to support the involvement of subject tutors unless the fee income reflected more closely the time and resources required. At the institutional level, the situation reflected the history of Learning Power at [University B]. The programme had developed from a pilot programme in which resourcing issues had become clear. The timing of Learning Power was therefore unfortunate because it inherited the perception that programmes of this type were liable to be difficult to resource. (York Consulting Ltd, 1999, p44)

Meanwhile, at University A, the Tutor continued to lead with no formal leadership role nor management group, on the basis of goodwill. University B's virtually non-involvement resulted in pressure from other Schools at University A to participate, making the pilot scheme much larger than originally intended. The Vice Chancellor when interviewed by evaluators, readily acknowledged:

The very substantial commitment of personal time and effort by the Learning Power tutor may have meant the cost was 'invisible' from the institution's viewpoint. (York Consulting Ltd, 1999, p45)

Steering colleagues, encouraging commitment, creativity and innovation, the Tutor chaired University wide meetings, stimulating lively discussion on widening access and student-centred learning. University A, from the outset, led the initiative, attracting virtually all the learners. The exciting potential of work-based learning and its significance for achieving the University's mission were recognised by all participants. Freedom to experiment and develop a work-based learning framework and network across and beyond the university was a powerful catalyst for staff and curriculum development and strong professional inter-Faculty relationships developed.

For University A there was enthusiasm and eagerness to learn from the experience, which at University B may have become dissipated due to their involvement in an earlier pilot. (York Consulting Ltd, 1999, p46)

However, as numbers of learners and participating Schools increased, inevitable tensions developed, not least staff development needs, particularly regarding (AP(E)L). Had the initiative been confined to the three Schools originally designated, the problem of insufficient resource to raise awareness and 'warm up' key individuals in all areas of the institution could arguably have been contained. Moreover colleagues were operating on the basis of goodwill. The reluctance of University B to become involved resulted in University A being encouraged by the TEC to involve more Schools, even though tutors there had limited experience.

The need for clearer structures, properly constituted and approved awards and funding arrangements emerged. The entry mechanism, the work-based learning module run by the Learning Power Tutor in PED, was mandatory for all learners. Progression from this to other Schools was challenging, as was tracking learners. Quality assurance, benchmarking, assessment and consistency across Faculties were issues to be addressed.

For Learning Power students, the acquisition of a qualification was the most important motivating factor. They chose it for its relevance to work, its flexibility and the fact that it was work-based.

During the pilot scheme, some 100 learners registered on the programme, working towards a range of awards, from Certificate and Diploma to Degree or Masters/Doctorate qualifications. Learning Power's flexibility proved suitable for small to medium-sized companies, as well as the Health, Professional Development and Business sectors.

Both employers and their staff were primarily motivated by a desire to combine work projects and relevant higher education studies in a flexible and practical fashion. (York Consulting Ltd, 1999, p14)

This finding accords closely with proposals outlined in a recent government White Paper.

Many learners do not want to be tied to learning in a classroom. Many adults, in particular, are looking to learn in informal self directed and flexible ways- in the evenings, in their places of work, at weekends and in their holidays. This flexibility will be essential if we are to attract into learning those for whom traditional learning methods have formed a barrier-including women returners and those turned off learning by poor experiences at school. (DfEE, 1999, 2.2).

Case Study Evaluations:

The TEC commissioned case studies to evaluate whether Learning Power attracted HE contact and participation. They published and distributed these Case Study Evaluation Packs nationally.

One such study involved a Chief Executive of a small training trust who enrolled all his staff:

We heard about Learning Power through a mailshot from the TEC and I liked the idea better than studying part time. The benefits to our company are vast. Our people now feel better about themselves because their work experience has been recognised and they feel much more confident and ambitious. (TEC, 1999)

One of his employees, managing an ESF project for long term upskilling for low and semi-skilled employees said *'I've always wanted to prove my school teachers wrong who wrote me off as a failure at school'* (TEC, 1999).

Joe joined British Telecom (BT) as an apprentice when he left school at 17. Currently a project manager, he is working towards a MPhil/PhD through Learning Power.

The main motivation for me was to gain a globally recognised qualification that was also directly related to my work area, enabling me to significantly increase my contribution to the business. I really believe that work-based learning has to be the future for higher education, it relates to the real world and develops skills that are directly transferable to the workplace. It provides people with the opportunity to learn and positively contribute to the development of their organisation at the same time. (TEC, 1999)

Lisa manages Intensive Care Units at two large hospitals. Her work for a degree is to improve the quality of care given.

I wanted to do a flexible degree because I've got a demanding job and children, so fitting studying in with my work was a perfect solution. I also knew that when I began the programme that my job would change when we became a new trust and the good thing about Learning Power was that it didn't matter. To succeed on this type of programme you've got to be both mature and motivated. I never liked the idea of sitting in lectures and seminars- I much prefer to be getting on with the job and know that what I am doing is helping me to get a degree. (TEC, 1999)

It has been suggested that employers perceived graduates with work-based degrees as less professionally developed than their more conventionally qualified counterparts. LP students were sensitive to any suggestion that theirs was:

an inferior or undervalued route to a higher qualification. In the meetings that we attended, it was clearly stated (by students) that this was not the case and that 'Learning Power degrees are real degrees. (York Consulting Ltd, 1999,p32)

However, some learners said that '*not all University staff seemed aware of the scheme's requirements or recognise/value any academic rigour in work based learning.*' (York Consulting Ltd, 1999,p30)

Another put it more bluntly. '*The University could do with going on Learning Power*' (York Consulting Ltd, 1999, p30)

Overall though, participants were:

impressive in their enthusiasm, interest in each others' progress, and commitment to pursue their learning goals. They recognised that that they were to some extent pioneers themselves, and took some pride in the fact as well as acknowledging some of the inevitable costs. (York Consulting Ltd, 1999, p35)

Asked about the future of Learning Power, learners said:

For people like us it's the best thing since sliced bread. It has been a well kept secret, but if everybody knew about it the demand would be overwhelming. (York Consulting Ltd, 1999, p35)

In summarising its findings, the evaluation states

It seems likely that most learners would not have gained access to similar learning opportunities, had it not been for Learning Power; likewise, most of the businesses or other organisations involved would not have developed their workforces to the extent being supported by the programme. (York Consulting Ltd, 1999, p47)

Conclusion

This paper began by considering the way in which work-based learning has become something of a slogan, with no clear definition. The lack of clarity in its usage has been largely a result of the considerable variations that exist in the types of initiatives that have arisen. In this sense the definition of work-based learning has become implicit and contextually bound. Yet, at the same time, alongside ideas of lifelong learning, it has become a key concept in the political perceptions of how education for all and for a lifetime should be achieved. In the UK there has been a considerable growth in initiatives and agencies that have subscribed to these aims. These have included: Learning and the Knowledge Economy, Investors in People, the Business Case for Learning, the Emergence of the Corporate University, University for Industry and Learn Direct. These are so-called:

While there has been somewhat of a consensus as to the importance of these ideas of 'learning for life' and 'education for all', there have been no clear guidelines as to how the various agencies involved in the delivery of education and training should proceed. Thus, while the rhetoric has talked passionately about the need to build stronger bridges between education and the economy, and the importance of partnerships in delivery, instances of good practice have not been easy to discern. Instead, the reality of such work-based partnerships has been largely frustrated by lack of clarity in purpose and by partner agencies with vested interests. In the course of these fragmented attempts, clients, learners themselves, have been left to negotiate their way through the confusion.

This paper has located work-based learning within the UK Higher Education context and has documented how it took place in one new university. It has provided an important example of how such initiatives can deliver useful and meaningful experiences for clients that are essential to their on-going learning and employment progressions. Most importantly, it has highlighted some components that may be considered necessary in the building of effective partnerships.

The key to its success lies in its co-ordination. The HE, TEC and DfEE partners, employers and learners were encouraged to work together and strengthen their links through a mentor/co-ordinator with a hands-on approach. Building those links, sustaining co-operation, confidence and mutual support, deepening trusting relationships are key components of mentoring. The Learning Power Tutor represented a hub, a focal point through which all stakeholders could access and negotiate a set of mutually accepted values to which all agreed to subscribe.

Arguably, the most intransigent barriers of all were those experienced internally, within the School and the University itself. No resourcing meant no acknowledged time for co-ordination, borne out of confusion around ownership of the scheme. The Learning Power Tutor's School saw it as a University wide initiative. The University saw it as a School one and a lack of interest and recognition stemmed from this confusion. At institutional level, there was no formal management structure. Procedures for approval and quality assurance were seemingly strongly inhibitive of risk taking. There was no clear infrastructure or clear regulatory framework. Costings and funding were issues unresolved. Liaison with employers was being neglected as demand increased. Staff expertise was limited, creating pressure on a small team of people, as the need for staff and student support increased. This was partly influenced by the drop out of University B and the increased demand on University A. Enrolment and admissions and administrative staff were largely unaware of Learning Power and inconsistency across Faculties in terms of practice and procedures was causing concern.

The rhetoric on building bridges, partnerships, links between industry and education is legion. Lifelong learning is a notion embraced by many current initiatives, for example TECs, the Department for Trade and Industry (DTI) the DfEE, National Training Organisations (NTOs), the Careers Service and others, who aim to provide an adaptive and new skilable, reskillable workforce. Their mission, to enhance the transition between education and training and the workplace and hence increase efficiency and affluence sounds laudable, but what does this really mean?

In reality, disparate partners have no joint ownership of work-based learning. Each has its own interests, its own perceptions of its clients and their needs, in terms of its role, targets, outcomes. Each has its own acronyms and indeed its own language. There is no one set of commonly agreed and shared values, no negotiated contract or commitment. Above all there exists rivalry, competition not co-operation and a dearth of trust. A lack of joint understanding of what constitutes work-based learning, combined with a resistance to change has served to compound matters, to reinforce not remove barriers.

However, the pioneering work undertaken by a group of perhaps naïve enthusiasts at University A has now been converted into a heavily resourced university-wide work-based learning project based in the School of Professional Education and Development, a platform for the university, a centre for excellence. The intention is to mainstream rather than marginalize work-based learners. Thus, at a local level, lessons learned and issues identified during the Learning Power pilot are now being approached in a rigorous and systematic way. At a wider national and international level, future initiatives need to be cognisant of the need for a strong central mentoring/co-ordination role with a hands-on approach to management and liaison with employers. Imperative will also be the development of clear, transparent infrastructures and regulatory frameworks, along with associated staff development and student support networks, with appropriate resourcing.

A new University steering group for work-based learning is now underway. Its early discussions have focused on the need to maintain accessible language. Its priorities include the development of a regulatory framework, funding arrangements, the mapping of the arena and investigating the merits of curriculum models. Issues of further liaison and networking with employers, staff development and student support remains and the use of external advisers to reduce pressure on the limited number of expert staff are being considered.

In July 2000, the Education and Employment Minister urged employers, universities and colleges to become involved in the development of the new foundation degree - a so-called new qualification for a new century. The emphasis is to strengthen links between HE and the world of work, in a radical and direct response to employer demand. The foundation degree may provide a vehicle for innovative and forward thinking enterprise, to create new vocational higher education programmes.

Despite all the challenges, Learning Power has emerged as a national leader from which valuable lessons can be learned, not least in relation to foundation degrees. The main lesson is that whatever factions are involved, the overriding need is to create, through a central mentoring body, negotiated shared values and understanding of what the various roles and responsibilities might be for all stakeholders. Underpinning this is the will to succeed, to put the learner in the driving seat. The one common client, after all, is the learner.

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THE RELATIONSHIPS BETWEEN R&D AND DECISION-MAKING IN VOCATIONAL EDUCATION AND TRAINING

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1. Introduction

Does R&D have an impact on decision-making in vocational education and training (VET)? If so, through what pathways?; and, if not, why not? Previous studies have shown that the relationships between R&D and its decision-making outcomes are almost always complex and not easily discerned. This paper considers seventeen case studies and is based on the book published last year (Selby Smith, 1999).

The paper is organised in five sections: introduction; background to the study and the approach adopted; evidence which confirms the broad framework proposed concerning the relationships between R&D and decision-making in VET; evidence which modified the framework; and four conclusions.

2. Background and approach

The idea of a one-to-one relationship between R&D and decision-making generally has been discredited, although individual studies may have an impact. The R&D system's major contribution to decision-making may be through the 'big ideas' which are in good currency, often with a considerable time lag. There are many sources of R&D, many potential uses for R&D in decision-making and many potential pathways between researchers and decision-makers.

In April 1996 the Research Advisory Council of the Australian National Training Authority (ANTA RAC) advertised a consultancy to review the evidence for and where possible evaluate the extent of influence of research on decision-making in VET. ANTA RAC accepted that the research question should be examined from five complementary perspectives: a review of relevant literature, noting that there is no single approach to the issue; a symposium, to identify issues promptly and draw on different perspectives and approaches; quantitative studies; case studies; and a reference to overseas experience and perspectives. The case study component was viewed as an essential, since surveys and case studies tend to build on the advantages and offset the disadvantages of each other.

A consistent approach informed the different perspectives (see Selby Smith et al, 1998, chapters 1-2). It was argued that analysing the extent of R&D's influence on decision-making in VET, and the pathways through which it operates, necessitates consideration of three areas: decision-making, R&D and the linkages between them. Also, a distinction was drawn between 'use' (whether the R&D had served a particular purpose) and 'influence' (whether the R&D made any difference to the decision taken). The relationships between R&D and decision-making were considered primarily from the perspective of decision-making and action. Key terms and the scope of the study required definition, so that concepts were applied consistently (Selby Smith et al, 1998, pp. 153-160).

Four main factors influenced the selection of particular case studies. First, a substantial number of case studies were required if the diverse range of factors which can affect the relationships between R&D and decision-making were to be properly represented. A purposeful maximum variation sample was selected, which enabled the project to capture and describe 'the central themes or principal outcomes that cut across a great deal of participant or program variation' (Quinn Patton, 1990), rather than seeking to choose a 'representative' sample. Secondly, the selection of case studies was affected by the particular interest in the impact of VET research on decision-making in three areas. Of the seventeen case studies: seven relate to decision-making at national and State/Territory level; six relate to individual training providers; and four to community relations aspects. Attachment 1 shows the classification of each case study. Thirdly, most of the case studies examined R&D initiated by users, which may be thought more likely to have a subsequent impact on decision-making. Nevertheless, some projects were initiated by researchers, and it is of interest whether the mode of initiation affected the subsequent impact on decision-making. Fourthly, there had to be researchers who were available and willing to undertake the case studies. Contributors had the opportunity to revise their case study in the light of workshop discussions and most did so.

3. Confirmatory evidence

3.1 The decision-making domain

The case studies emphasise the importance of R&D for decision-making at each level of decision-making.

Policy-making at national, State and Territory level. Robinson's case study argues that R&D was important in establishing the conceptual case for traineeships developed by the Kirby Inquiry in the mid-1980's; and contributed to the prompt adoption of the traineeship recommendations by the Federal Government. The case study by Hawke and McDonald illustrates research's contribution to the development of an R&D strategy for VET, primarily at the national level. Selby Smith and Selby Smith illustrate the use and influence of R&D on user choice policy-making. Hawke and McIntyre's study of research on adult and community education commissioned by the NSW Board, shows that it was used by national and State policy-makers. Whether it had influence is more difficult to establish. Tidemann's case study illustrates the multiple impacts that R&D had on the development of the 1998 strategic plan for VET in Victoria.

The case studies confirm the conclusions of an earlier study (Selby Smith et al, 1998) that R&D does have impact — use and influence — on decision-making in VET, but not in the way many people think. There are many different types of R&D, many potential uses of R&D in VET decision-making, R&D can be used in a wide range of decision-making contexts, and there are many pathways between the two domains. Importantly, the case studies confirm that the extent to which R&D is used and has influence can be enhanced by the actions of stakeholders. However, the extent of the use or influence of R&D cannot be determined by considering the research system alone. Its use and influence depends critically on the circumstances of decision-making in a particular context and the linkages between research and decision-making in that context.

The case studies emphasise that R&D was only one information source, that information from all sources was only part of what contributed to decision-making and that it was not necessarily the decisive contribution. However, to the extent that critical debate is valued, R&D's potential contribution is assured. Researchers should have suitably modest expectations.

Policy-making by VET providers. The case studies illustrate the contribution which R&D has made to decision-making by public and private providers. For example:

- Seddon and Clemans concluded that R&D 'does impact on goals and operational decision-making in VET enterprises ... [although] there is substantial variation in the extent of enterprise-based research, its character and its applications', which is 'strongly influenced by the views of research held by enterprise management and the extent to which they perceive a practical link between research activity and enterprise operations'.
- Creek's case study of R&D's impact on academic developments at the Murrumbidgee College of Agriculture, specifically the development of the Aboriginal Rural Training Program, suggests considerable use and influence (the participants certainly believed them to be substantial). Of course, agriculture has a long history of R&D, linkages between researchers and users, and an export orientation to sales in highly competitive markets.
- Trembath argues that the research on credit transfer undertaken at RMIT, one of Victoria's dual sector TAFE and higher education institutions, had a useful influence on decisions concerning policy and practice.
- Jones's case study examined the impact on decision-making in the Sydney Institute of Technology, the largest VET provider in Australia, of the development of the resource allocation model by TAFE NSW in the early 1990's. He concluded that the Sydney Institute became a much more effective organisation as a result of its increased research orientation. The positive outcomes for decision-making transcended the single study which initiated the change.
- Sefton and Waterhouse's case study investigated the impact of R&D upon policy and planning, and also upon practice and performance, within a registered private provider. Use and influence were both shown to be substantial; and integral to the operation of the organisation. R&D conferred a competitive edge in contested markets.

Community Relations. Other case studies were concerned with the relationships between R&D and the wider economic, political and social systems with which VET interacts. In general, these relationships between R&D and decision-making tended to be less distinct, longer term, and indirect rather than direct:

- The case study by Hawke and McIntyre included consideration of public opinion, the policy process at both national and State levels, and the activities of Senate Committees. Through these diverse processes, the research 'has helped to establish 'research' itself as a basis for strategic policy development, as the sector continues to manage a turbulent policy environment'; 'has helped to position ACE amid the difficulties of training reform ... [and] challenge ideas that the 'vocational' should be narrowly rather than broadly understood'; and 'has moved policy in new directions'.
- Trembath suggests that, for the R&D undertaken at RMIT, the time scale of use was frequently short-term, whereas the time scale of influence was probably medium term; for example, in the broader community, among other researchers and in terms of RMIT's policies and practice. Many more presentations concerning the R&D were given by the research team outside RMIT than within it.
- Butler and Ferrier concluded that in the important area of equity research 'overall the impact of research on decision making is limited and narrow Over a long period, equity research has again and again yielded the same or closely similar recommendations for action. However, when it comes to putting these recommendations into effect, attention and resources are allocated elsewhere. Priority is given to other matters'. They raise the question of whether the research was sometimes done 'to be seen to be doing something' rather than with a realistic expectation of influencing decision-making.
- Golding's case study examined a specific and fortuitous finding of university to TAFE movement in one locality and in one course in one State (Victoria), which turned out, through close examination of a wide range of movement and recognition data, to be indicative of an important national phenomenon. It took some time for the implications to be generally recognised and, as Golding noted, 'those institutions with most to gain from the research, such as VET multi-sector institutions, and TAFE institutions with strong university links, were most co-operative'.
- Rushbrook and Clemans note the importance of local networks, including local newspapers, and the wide variation in levels of empowerment between localities, as affecting the degree to which R&D had audience and was used.
- Anderson shows that the extensive dissemination of the research on student support services and amenities in TAFE through a variety of media ensured that the R&D reached interested parties at various levels of decision-making. This continued over a considerable time period. Both factors appeared to be important for the R&D's use and influence.

Other Aspects. The case studies illustrate that R&D can be used for different purposes, and at different stages of the policy process. R&D can confirm decisions which previously were being considered favourably; contribute to decisions *not* to act as well as decisions to act; and consolidate the support for future decisions. The impact of R&D is affected by the relative power of stakeholders, and the degree to which R&D evidence and attitudes have audience. Also, the timing of R&D can affect its impact. Relatedly, so does the willingness of both decision-makers and researchers to interact throughout the research process, including considering changes in deliverables and timing.

Although R&D *can* influence particular decisions, it often tends to influence decision-making through accumulation. Trembath stressed the multi-causal basis of much decision-making. R&D contributes to a reservoir of knowledge from which decision-makers can draw, and so a climate of opinions against which background certain ideas, approaches or ways of thinking are more likely to be adopted by decision-makers than others. Similarly, in Anderson's case study informants suggested that 'the increased attention paid to student services issues at a state level in 1996 was not a discrete outcome of *Are you being served?*, but rather the cumulative effect of a series of reports'. Golding argues that research which does not build on past work runs the risk of having ephemeral influence with decision-makers.

Finally, the case studies reveal that the influence of R&D on decision-makers can be significant, even when the decision-makers are not aware of it. Conversely, where the intellectual infrastructure of a decision-making organisation is weak, its ability to benefit from R&D activity, whether inside or outside the organisation, tends to be impaired.

3.2 *The research and development domain*

The case studies illustrate the very wide range of environments within which R&D in VET can be undertaken. The various settings are not necessarily independent; there can be alliances which serve their mutual interests; and overlapping interests, skills and experience among them. Nevertheless, the different R&D settings tend to concentrate on different types of research. They also tend to attract researchers with different approaches, values and interests, which can affect the R&D which is undertaken and the audiences to which it is communicated. Some evidence suggested that the perceived quality of the research methodology and analysis, and the reputation of the researcher, also influenced decision-makers about particular research findings.

The case studies illustrate the wide range of methodologies, techniques and approaches which are employed in VET research. For example, Sefton and Waterhouse argue that the practice of the private VET provider 'is informed by theories such as those on adult education, language, literacy and discourse studies, ethnographies and pedagogies of work related learning, investigations of embedded technical knowledge and so on. Conceptual understandings that contribute to shaping this organisation's curriculum development and teaching practices also include work in other fields such as political economy, work organisation, HR management and industrial relations, particularly as these relate to workplace learning.' Creek and others emphasise the valuable base of statistical information for both R&D and decision-making provided by the Australian Bureau of Statistics.

Different case studies adopt approaches based on particular academic disciplines. This influences such matters as the problems identified as important, the key questions posed, the techniques adopted to investigate them and the audiences with whom linkages are established. The appropriate research approach is, of course, related to the question to be investigated. To the extent that policy issues warrant attention from more than one disciplinary perspective, researchers require, not only competence in their discipline, but other skills and personal characteristics to enable them to collaborate effectively.

Most of the R&D in the case studies was initiated by users. It might be thought that where users initiated the research they would be more likely to have a purpose in mind, to be aware of the research's developing findings and to use them in their decision-making. There was considerable evidence from the case studies that they did. However, in other case studies the research was initiated by researchers. The case studies by Dwyer, Golding and Anderson are illustrations. In each case the research was used and had influence with decision-makers, although sometimes in rather unexpected ways. The conceptual and practical implications for decision-making of R&D based on investigations of real world situations in their full complexity can be difficult to handle.

The case studies continue the importance of R&D in providing new and better information. R&D can also apply existing knowledge in new ways, including for new audiences and in new settings. The case studies illustrate, too, the human capital outputs of research. The contribution of R&D to improved decision-making in the case studies was dependent, to a significant degree, on an approach, a way of doing things or of assessing alternative sources of information.

3.3 *The Linkages Between R&D and Decision-making*

The idea of a one-to-one relationship between R&D and decision-making generally has been discredited; and the case studies support this view. Thus the linkages become more prominent, whether direct or indirect, immediate or longer term. The case studies show that the linkages between R&D and decision-making, and between researchers and decision-makers, are significant in determining whether R&D is used and has influence. McGaw's consideration of two national reviews of educational research, one of which had its recommendations implemented, the other not, illustrates the important role of linkages. When users commission research it can reduce the uncertainty of the research process, affect the methodology adopted and increase awareness of the developing findings among the relevant audiences. Similarly, the importance of linkages at the level of VET providers is illustrated in the case studies of Creek, Jones, Rushbrook and Clemans, Seddon and Clemans, Sefton and Waterhouse, and Trembath. Conversely, the case studies by Butler and Ferrier, Foyster and McGaw emphasise that where linkages are weak the impact of R&D on decision-making tends to be less. Golding has noted that the skills required for effective dissemination are not exactly those required for competent research; and that frequently the argument needs to be sustained on a continuing basis, perhaps in a variety of forums. Anderson's case study supports this view.

The linkages can be direct, as when R&D occurs in the decision-making context. This is illustrated by Tidemann at the State policy-making level, and by Creek, Jones, Seddon and Clemans, Sefton and Waterhouse, and Trembath at the provider level. Creek's case study illustrates a situation where there was

continuous research and review, with mutual respect and mutual learning designed to achieve improved outcomes.

Linkages can operate when the research study is nearing completion. However, overall the case studies support Huberman's conclusion that sustained interactivity is an important means of achieving instrumental change; that both formal and informal linkages can contribute; and that linkages established during a project can have effects which transcend the single study (Huberman, 1990).

In an organisational context, Tidemann shows that the research process itself can be a valuable opportunity to develop useful knowledge, improve research skills and attitudes, and enhance linkages. Similarly, when 'providers bring R&D into their day-to-day work' and 'the practical realities of their day-to-day work informs their research' (Sefton and Waterhouse).

There is a role for intermediaries or brokers, given the significant differences in attitudes, cultures and incentives which exist between the R&D and decision-making communities, to facilitate exchange between the producers of R&D and its potential users.

Finally, R&D can contribute to the research system rather than directly to decision-making. In the long term this augments the reservoir of knowledge from which decision-makers draw. Modest initial impact does not necessarily preclude a larger impact eventually.

4. Evidence which modified the framework

Overall the framework for analysing the relationships between R&D and decision-making is broadened rather than changed fundamentally by the evidence of the case studies. However, the case studies emphasise the great diversity of circumstances in which the relationships between R&D and policy, practice and performance in VET take place. Of the seventeen case studies no two are identical. In some cases R&D is used but does not have influence, as in one case cited by Trembath. In other cases R&D was both used and had influence on decision-making: at the level of national and State policy-making; and at the level of individual providers. In other cases the research appeared to have little influence, as illustrated by Foyster's case study; or the outcome is more ambiguous, as in the case studies by Anderson, Dwyer, and Golding. The impact of the R&D was not always exactly what had been expected initially, as illustrated by Jones. In a number of cases there was uncertainty about the precise degree of R&D's use or influence.

Despite a common analytical framework, authors' efforts to address the questions raised in the template and the workshop discussions, the case studies are more striking for their differences than for their similarities. They reveal the dynamic, turbulent and demanding environment in which VET providers, policy-makers and practitioners are operating. The VET environment is contested: between Commonwealth and State Governments; between public and private providers; and between the industry partners. The case studies also confirm that much R&D is undertaken at provider and practitioner level and has a significant effect on decision-making there.

The case studies, especially those by Anderson, Butler and Ferrier, Creek, Dwyer, Golding, and Sefton and Waterhouse, brought students and workers into prominence as an additional set of significant decision-makers by whom R&D can be used and on whom it can have an influence. For example, the research by Dwyer found that the actual choices made by students were clarified, and in many cases reinforced, by their participation in the research. There also appeared to be evidence that R&D had influence on practice and performance at the local level; and contributed to some change in community attitudes.

5. Four conclusions

First, the seventeen case studies, taken together, confirm the validity of the broad framework adopted for analysing the relationships between R&D on the one hand and policy, practice and performance in VET on the other. Typically aspects of the decision-making arrangements, the relevant R&D system and the linkages between them are significant. Within the decision-making arrangements the case studies illustrate the role which can be played by the policy process, the relative power of the respective stakeholders and the assumptive worlds of key actors. Within the R&D system the three attributes of new and better information, research skills and attitudes, and educated people are all shown to be significant. Linkages between R&D and decision-making, and between researchers and decision-makers, are shown to be important: formal and informal linkages; and linkages before the research project, during it and at its completion. Linkages established through a single project can have effects which transcend it; linkages can be important at each level of decision-making; and linkages can be indirect as well as direct. The emphasis on linkages rather than

on more narrowly defined dissemination increases the mutual responsibilities of both researchers and decision-makers.

Secondly, the case studies emphasise the complexity of the specific circumstances through which the broad relationships between R&D and decision-making operate; and the importance of considering dynamic as well as more static aspects. The precise contribution of R&D to decision-making is hedged with many uncertainties and qualifications. Administrators, policy-makers and VET practitioners tend to seek clear conclusions and simple recommendations for action, whereas R&D often reveals the complexity of real life situations. The case studies also emphasise the importance of individual champions in initiating R&D and using it. One set of decision-makers, often overlooked, but brought to centre stage by certain case studies, were trainees and students. R&D can influence their participation, their decision-making and that of training providers through their active involvement in the research process.

Thirdly, in considering the relationships between R&D and decision-making in VET the case studies complement other approaches, by providing a richness of detail and an appreciation of the complex channels through which the broad relationships operate. For example, surveys enable familiarity with a wide range of material, speedy appreciation of common elements and generalisations about the overall project; but the analysis tends to be shallow compared to case studies, which allow for a much greater depth of understanding. The research question was illuminated by the use of purposeful maximum variation sampling, the wide range of cases and their diverse circumstances.

Fourthly, the case studies raise the difficult issue of the precise boundaries of R&D, especially in relation to research skills and attitudes, and at the practitioner level. Indeed, it has been argued that in organisations where the culture of R&D is strong, the distinctions between R&D, continuous improvement, action research, professional social inquiry, reflective practice, learning and work become blurred. An openness to evidence in making decisions, for example, can be characterised as a way of working, as well as characteristic of R&D. A number of the case studies can be seen as wrestling with how best to define the precise boundary of R&D activity. Indeed, in an increasingly turbulent environment, an interest by decision-makers in evidence, an openness to new perspectives and a willingness to learn progressively and systematically from the experience of oneself and others is central to improving policy, practice and performance. The case studies illustrate the diverse ways in which a beneficial relationship between R&D and VET decision-making can operate, or be frustrated.

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Attachment 1: The Seventeen Case Studies

(A) NATIONAL, STATE AND TERRITORY POLICY MAKING

1. When the backwash dwarfs the wave: A case study of the relationships between research, policy and practice concerning two-way inter-sectoral movement in Australia *Barry Golding*
2. A research and development strategy for VET in Australia *Geof Hawke and Rod McDonald*
3. ACE works *Geof Hawke and John McIntyre*
4. Impact of national reviews of educational research policy *Barry McGaw*
5. The development of traineeships and the impact of research *Chris Robinson*
6. A research contribution to user choice policy making *Chris Selby Smith and Joy Selby Smith*

(B) VET PROVIDERS

8. The impact of research on the Aboriginal Rural Training Program *Geoff Creek*
9. Review of the TAFE NSW Resource Allocation Model and the impact on the Sydney Institute of Technology *Brian Jones*
10. Decision making and 'capacity building' in Victorian Adult and Community Education providers: The *Forging pathways* learning package *Peter Rushbrook and Allie Clemans*
11. Enterprise-based research in seventeen VET providers *Terri Seddon and Allie Clemans*
12. Developing a culture of research in a VET provider *Robin Sefton and Peter Waterhouse*
13. The cross-sectoral experience: An analysis of credit transfer in Victoria's dual sector institutions *Richard Trembath*

(C) COMMUNITY RELATIONS

14. Lost in action?: The case of *Are you being served?* *Damon Anderson*
15. Doing research: Talking policy. The case of equity and VET *Elaine Butler and Fran Ferrier*
16. Participant pathways and outcomes in vocational education and training: 1992-95 *Peter Dwyer*
17. Literacy levels in Australia: An example of zero-impact research *John Foyster*

CONTEXT VARIETY MEANS FOUR STORIES? UNDERSTANDING LEARNING IN WORK

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Introduction

Under circumstances of economic growth it is not wise to organize the advanced learning of higher educated people like professionals in *external* or off-the-job learning arrangements (Van der Krogt 1998), because this consumes too much time. In order to enhance learning and innovation nevertheless, providers of advanced education like universities have to develop strategies to diminish the time one needs for learning. One possibility is to integrate work and learning. To support this integration we have to rethink the relation between work and learning. This paper contributes to this. I work towards a model that considers other aspects than the job control-job demand model (Karasek & Theorell 1989) and the individual and organizational factor model (Karakowsky & McBey 1999). It was inspired by the sociological view on learning as expressed by Lave & Wenger (1991) and Brown & Duguid (1996). Their attention for learning as a social activity is a good start. I add attention for patterns and mechanisms that derive from the wider context that influence these activities. The aim of this paper is to introduce some aspects of these patterns. My question is here: how do context and transactional environment influence or produce the articulation of the demand for learning.

I end this introduction with one remark on the terms. I prefer the more generic terms 'higher educated people/' instead of the more common 'professionals'. I use the word 'professionals' only when people are a member of a group that really controls an occupation with e.g. accreditation and a related professional education (Ross, 1996). This is in fact a special case.

The learning of higher educated people & the challenge for designers

Most higher educated people learn frequently in their work, because their work has a good balance of job demands and possibilities for control (Karasek & Theorell 1989). They work on a large variety of tasks in varying situations and these are also conditions that enable learning (Karakowsky & McBey 1999). Their learning is largely implicit, but also explicit: they plan new developments in their work and organize informal learning projects (Tough 1971; Price 1997).

After some years of working experience, they nevertheless seek extra opportunities for learning. They enter into learning programs offered by their employer or by colleagues, and/or participate in external learning arrangements with a varying learning demand.

Because they learn from a combination of activities (in daily work and in formal arrangements on-the-job and off-the-job), the arrangements that support these learning activities must be mutual complementary. Designers of formal (in- or external) learning arrangements must try to fulfill this requirement of complementarity (instead of only the requirements of academic quality). We (corporate trainers, managers of corporate universities, providers of executive management education, post-experience professional programs, work-based-learning alliances) must be well informed on the learning activities in work and their outcome. I think these produce the learning demands (the concept of 'demand' is here used to describe the fact that some people contact providers of education and express their wish to cooperate with the aim of learning. They have a problem or a goal, and they think a provider can deliver them a solution to solve the problem or a path to reach the goal). And I think they are a fruitful starting point for formal learning.

The learning curriculum in work

How can we look at these learning activities? We can learn from psychology (Karasek & Theorell 1989; Karakowsky & McBey 1999) that learning is enhanced or constrained by the design of the workplace and by other organizational patterns: certainly not all jobs or occupational roles offer an equal amount of learning opportunities. However, this angle reduces our view to individuals as learners and to a small number of organizational characteristics. This angle implies also a concept of knowledge and experience that will not help us to make proper designs for learning. I prefer to look at work as a curriculum. I take this from Brown and Duguid (1996). They make in their 'Stolen Knowledge' the distinction between the 'teaching curriculum' and the 'learning curriculum'. This distinction is closely related to distinct concepts of the meaning of knowledge, experience and learning: *"The difference may be at heart a very deep epistemological one, between a view of knowledge as a collection of real entities, located in heads, and of learning as a process of internalizing them, versus a view of knowing and learning as engagement in changing processes of human activity. In the latter case knowledge becomes a complex and problematic concept, whereas in the former it is learning that is problematic"* (Lave 1993:12). With this

distinction we can to free ourselves from the centrality of the a-contextual knowledge and the related (psychological) individual conception of learning in the educational practice. This makes room for a systematic attention to the social practices of learning in work of highly educated people, and their outcomes, and also provides a base for experiments with new approaches, like designing learning arrangements with a minimal centrality of the content or knowledge (Ballou, Bowers, Boyatzis & Kolb 1999; Smid 1999a).

An overview of literature

Studies provided by Orr (1996), Lave & Wenger (1991), Wenger (1998), Chaiklin & Lave (1993), show a rich landscape of social practices of learning in various occupations (like midwives, navigators, maintenance technicians, claims processors, blacksmiths) and of useful concepts and models to analyze other situations. The focus is mainly on skilled labor and on the immediate or transactional environment of the workers. Studies on work based learning like Boud & Garrick (1999) provide us insight in the attempts to relate the learning outcomes of learning in work to formal accreditation. In these studies the large industrial organization is the (implicit) context. The focus is on the education prior to a first degree. The findings of these studies cannot be generalized to higher educated people with at least a first degree and a considerable work experience.

I know only a few systematic and specific studies on the learning practices in work of highly educated people with a first or higher degree. There is literature on the learning of managers. These studies provide some insight, but are more prescriptive than empirical and/or de-contextualize the learning. In fact they use the individual model of learning. In a recent study on learning in projects (Lundin & Miller 1998) more attention is spent to the learning as a social practice. Most projects were found only in an industrial context. Studies by e.g. Schön (1987), Latour (1987), Engeström & Middleton (1996), Price (1997) are rich in information at the micro level: e.g. architects, musicians, researchers, pilots. For a lot of other occupations and occupational roles of higher educated people such information is not available.

This overview of literature learns us:

- the learning of higher educated people is often not touched
- often the large industrial organization is the (implicit) context
- some literature is more prescriptive than empirical.
- one uses the individual model of learning and de-contextualizes the learning
- literature on learning of higher educated people is focused at the micro level

Research strategy

How can we increase our knowledge on learning in work as a social activity? The 'learning curriculum' in work is constituted by the practices in and around the workplace itself. The design of the workplace, the design of the organization, but also patterns and /or mechanisms that are embedded in the wider *contexts* and the *transactional environments* of higher educated people, produce effects on learning dispositions, learning activities and the expression of the demand.

I use here this model of 'context' and 'transactional environment of worker' as a start. The area where one has a degree of control is 'transactional environment', and the area where one has insignificant control is 'context' (Van der Heijden 1996: 155).

My question is here: how do context and transactional environment influence or produce the articulation of the demand for learning?

I use as leading sub *questions*: in what 'worlds' or 'frameworks' actors play while organizing, what 'strategies' they use to improve their 'positions' in the plays, what 'script' or course in time they are running, what intra personal 'hurdles' they have to take, what strategy one uses to develop knowledge and competencies and what this all means for their articulation of the demand for learning.

These questions showed me the way to rich sources in studies by Storper & Salais (1997) on four economic action frameworks, Abbot (1988) and Fincham (1996) on professionals, Kanter (1989) and Arthur & Rousseau (1996) on at least four types of careerscripts, Bourdieu (1990), Windolf (1981), Nicholson & West (1989) on work role transitions, Schön (1987) and Van Strien (1994) on knowledge and Weick (1989; 1996) on the relation between organizational design and learning.

I want to present the information here in a form that is congruent with the situation I write for. Distinctions from narrative theory like 'text', 'story', 'fabula' and 'generating mechanism' (Pentland 1999; Bal 1990; Zeeman 1991), although not unambiguous, help me to produce a representation. A person who expresses his learning demand speaks a 'text', this is a version of his or her 'story'. This story can be related to more 'objective stories' or the level of the 'fabula'. In the fabula we can find mechanisms, underlying structures that enable or constrain the fabula (and the stories and text). The information I gathered can be located at the level of the generating mechanisms. I present it in the form of a 'fabula'. Who tells those 'objective stories'? Journalists do. May I present to you John Hunter in a meeting, briefing some designers? He will introduce "Salty", "Mark", "Prof" and "Zig-

zag", and will tell about them. The 'character' Salty works in a world of industrial conventions, Mark in a world of the 'market', Prof in the world of intellectual resources, and Zig-zag in a world where interpersonal conventions are leading. The 'characters' are all male, this is congruent with the fact that most literature on careers I have found is on men and ignore specific patterns of women or part-timers.

The stories of John Hunter

Hello, I am John Hunter I am a journalist with a special hunch for educational affairs and I love to perform in this meeting. Are you the ones that must design proper learning arrangements for people with at least a degree from university and a considerable work experience? What a job! Nice and challenging! Well, I have been doing a lot of talking with these people in various contexts, on learning, their work, their careers etcetera., so my insights might be useful for you. It is funny, when I listen carefully to the voices of the people I have interviewed on my tape recorder and I connect this to what I have seen of their work, their business, the building etc., I hear really different stories. In fact I hear at least four! What I want to do now is stressing these differences. Of course I can make also other stories out of the tapes, but I think these differences are most interesting for you now. I will be talking about 'persons'. Of course these do not exist in reality, but, since you work with persons you can imagine better. The first story is about Salty, the second one on Mark, the third one on Prof and the fourth on Zig-zag.

Salty

Salty works within a company. They standardize their outputs, they compete on the basis of price and are keen on economies of scale. Of course they stick to quality standards. You know, this is the real world of production. They are in a business cycle, the demand can fluctuate, and they try to forecast this so they can handle their uncertainty. They will loose their job when the company cannot sell the products and the future is uncertain.

Salty lives in a strong hierarchy, in a rather closed world, the internal labor market is very important. All have their own workstation, the work is described. The quality of work is measured by this description, the wage is determined by hourly rates by workstation. These conventions also apply to Salty, one of the people with a degree or even a higher degree. The description of their work is never complete. They have what one calls an "incomplete contingent claims" contract: not all of their work is described but their activities must match to what have been described.

Salty is a member of a professional association, but I do not think this helps him very much in making more money. It is OK for information and networking, but he does not need it for his job as such. In fact many of his colleagues in the same function do not meet the criteria of the association.

To improve his position Salty advances in the hierarchy. He is in a vertical script - designed by the organization and managed by committees- from job to job, from rank to rank, all formally defined and related to other positions. Compensation, formal training and development and responsibilities are tied to the rank. He does not attach too much to tasks or persons, because "movement is the name of the game". He invests quite some time in organization politics. Of course he is strongly attached to the organization. Some of his colleagues had to wait until a post became free, or until new posts had been created or even got "stuck". But not Salty, he advanced. At every next step in his career he had some stress, you know, leaving a position that was safe and entering a new field.

I do not think that he learns so much in his work, but his political skills sure develop! Taking risks is discouraged so he has become a bit passive in his learning. When he enters a separate learning arrangement within the company or outdoors, he goes on to perform as he is used to in his daily work. He is a bit stiff then, one can feel that. He always has to invest in his learning attitude, he has to find a better internal balance that is needed for learning. Of course he studies a bit, to be informed about new developments in his specialty. But for Salty it is far more important to be informed about what is going on in the company, not only about the 'politics', but the more on the way things are done.

Someone else decides about his participation to education. He participates in education and training when he has to improve the fulfillment of his function, when he has to prepare himself for a new, higher position or as what they call a "rite of passage". I see others participate in education because they did not understand the career game: this is often a tournament with a lot of players that do not know the rules and have a wrong perception of their possibilities. I hope for them the course provides them a better understanding of it and helps them to migrate to another function.

Mark

Mark is different. He is not so much attached to an organization, he is into the market place. Always busy with this questions: "What are our competitors doing? Can we make a good price for our stuff? Do we have enough in stock to please our customers? Do we meet their standards, of course given a price?" His organization is a collection of individuals. They work quite autonomous, the quality of their work is judged by the criterion of availability. The level of their wage is based on their task and time spent. When the company is not sure about the future they just reduce the task. Mark is a member of a professional association, but not for making more money. It is for his kudos, information and networking. Mark advances in his career by creating new value or new organizational capacity. He must be creative, innovative, he must distinguish himself and gain successes. He is really into in achievement. There is a lot of open and direct competition. Once at the desired place he simply stays in place. He works hard to let the territory he is covering grow. So: not 'up' but 'under' is the device here. Every commercial success is translated into a higher income. But every year is a fresh start, last year's success does not count any longer. His business must grow, otherwise he gets stuck. One says: entrepreneurs are born. But not entirely in this

case. Mark had a fast but gradual development. He started as an assistant within a marketing department, busy with the execution of marketing actions and delivering support for the design of marketing plans. Then he designed such plans, and stepped then into a more strategic arena: he had to integrate marketing, media and communication strategies. Then he became responsible for strategy: corporate brand management, corporate strategy for product development, and he was leading a team with product managers, marketing managers/assistants, communication- and media experts and/or direct marketing experts. He seems to learn everyday. Designing and selling products or providing services means: working together with clients, listen to them, analyze their problems, their deeper demands, prototyping, testing etc. Mark has knowledge on integrated marketing, media and-communication strategies, product development, knowledge on target groups. As a strategist he is a team leader, trans-disciplinary, and has a broad vision on developments in society with possible effects on the behavior of consumers, to spot possible competitive advantages. Sometimes his learning is obstructed because he has to write these marketing plans. The plan seems to provide certainty but what is a plan: a tool that prevents from dealing with future uncertainty.

He really is into quick results, so he repeats a lot. Sales, sales, sale, tempo, speed, speed. Of course he is stressed, but he feels this only after a week holidays. One of my informants, a woman, told me that this stress conflicts with rest and patience needed for learning. She said Mark and his mates are very impatient, restless, critical. She thinks they feel pressure to achieve. She thinks they are verbally strong and creative. She thinks that they are only into cognitive content, not into the process, but externally oriented and not into self-reflection. Well, she was well informed, she worked more than two years with people like Mark.

Mark is not a reader. No books. But of course he is informed about new developments in markets, marketing and product design. He has good knowledge of these themes but mainly related to his present field. He participates in education to enlarge the availability of his competencies. He takes the decision to participate in education himself because learning is considered to be his own responsibility. Mark will be the client of the provider, but of course also others in the company are relevant. Quite different, is he?

Prof

But now the third one, Prof. He hates standardization. Prof is really fond of variety. He and his colleagues all have their specialization. They compete via learning and reputation. They never know for sure that the path of knowledge development they have chosen will be fruitful. They discuss the choice with others with some reputation, and this might provide them some confidence. If this does not give them confidence they start a new path of development. They see themselves as experts, they judge the quality of their work by scientific and ethic standards. They always work alone or in a small group. They feel their wage is an investment in themselves.

Prof does his work already a very long period. It is interesting. He is really good in his field, he gained a considerable reputation. He always gets more demanding or rewarding assignments. In each assignment he seems to learn because he gets greater exercise of his skills. Some of his colleagues get "stuck" because their specialty is no longer wanted and they fail to develop a new one.

Prof is certainly not an organization man, I do not think he is very loyal to it. He is more interested in what other professionals do at other places. Some say: "have reputation, will travel". He invests some time in networking but anybody can see he hates exposure and maintaining weak ties.

Some of his colleagues want to restructure their network into some sort of a professional association. I guess they want to make others more dependent of them. But I am not sure whether this will work. A sociologist told me once that only a few associations manage to develop into strong professional bodies with substantial power and legitimacy. Only a few of them can determine who is entitled to work on the profession's problems and can define what knowledge one must have to become a professional. To entry one must follow a long educational path. This all depends on the professions' ability to gain trust and protection by the state. Only then they acquire better wages and other material benefits, respect, status and other forms of influence. It is the trick the medical doctors are very good in. The sociologist told me that this varies from country to country. But having a professional association does not mean that it works like in medicine. This is easy to see in the ICT business. The need for IT personnel is so booming, that employers do not demand more credentials than a first degree. The kind of knowledge one needs is continuously under negotiation. Participation in long educational programs does not meet any interest, though a first degree in engineering is common. But: IT people who do not have such a degree can be very successful. So I am not sure Prof will follow his colleagues and invest in a professionalization strategy.

Prof seems to have a hybrid role, like a lot of other professionals. He is not only expert but also does other things. He has to change gear frequently. That is not easy for him, because he is very much into his specialty. But he has to. A couple of weeks ago I had an interesting discussion with an academic on this issue, and we could compare both patterns of development. Prof started his career with 'doing neat work' you know, standard problems; the academic started with a PhD, learning to do neat research. Prof then got more complex problems and started to talk with clients; the academic then started to teach. Both then became the leader of a couple of projects with all sort of members in the group. The next step: the academic wants to become really senior, I guess a professor, doing research, writing papers, a lot of teaching, management and of course helping others with their research. In the near future Prof will deal with the clients in the boardroom, have influence in complex situations. He will be responsible for quality, and also for the policy of the firm. I guess both have to get used to this 'change of gear'. Prof is a learner. His work is learning. His knowledge deepens and extends. He sees his career as a permanent invitation to learn new skills (learning to do research, learning to write articles and books, learning to teach, learning to lead projects, to manage a group, a chair, a faculty, to network). But Prof must be really keen to

develop new skills for the new task, and not stick to his previous developed competencies. This is essential, I think. The academic I talked to had the same opinion. He was used to write a paper in his research practice, and then thought that teaching was the same as reading from the paper. He found out that this was a teaching style that was not correct with his mature students. So he entered into a course on teaching and developed new skills. Of course Prof studies every now and then. You know, new books but also good articles in scientific journals. They have a lot of subscriptions to journals at his work. It is mainly to benchmark himself, only sometimes he reads something really new.

He participates in education to improve his knowledge of the standards, or to learn to manage a small group or inter group networks. I know some professional associations also play a role in the definition of the education. But not in the case of Prof. He once took the advice of a mentor and entered into a course that also provides a good network. This has been a great help for his career. He has learned a lot about himself, about his learning style etc. Prof is really into content, and not into process. That is his weak point and he knows it! In one of those courses he met another guy who was not as successful as Prof. He was really frustrated and disappointed, and even sometimes aggressive. He was busy to make a career track towards an entirely different area, but it was quite difficult for him.

Zig-zag

The last 'character' I will describe I have called Zig-zag. He works with a lot of parties close together, they depend on each other. They are co-producers. They (and 'they' is: designers, constructors, providers and clients) communicate intensively to make the right design. They never are certain about the quality of the others. So they have to stimulate the mutual comprehension. Competition is based on quality, price is immediate related to that. Zig-zag is not a member of an organization, he is into networks. Zig-zag is a member of a temporal work community, his quality is judged on the bases of the market price of the products. The level of his wage is related to output. Zig-zag is responsible to adjust to unknown factors. He must have excellent communicative skills and a strong expertise. One can see him being really proud of the technical or intellectual results of the intense cooperation between co-producers.

His career follows no special script. It is his own script while working in projects. With other self employed people he forms temporal organizations like an ad hococracy, or a multi firm network. Someone once said that his script is anarchistic, but this is wrong. Zig-zag's career is really socially constructed, he always works with mutual shared definitions, development and progress. It is always something like: beginning, crafting, navigating, maintaining, and then start again. He advances by permanent development. He develops new skills in the area of content and in the area of organizational requirements. He understands the whole chain of processes he is working in better. Another good measure for development is the number of people he knows with good positions in networks. Each new project must contain a challenge on one or more of these dimensions. Zig-zag is keen to be asked for projects with a lot of complexity and uncertainty. This gives him prestige. The choices he makes are in his self interest. He is really committed to market discipline, always busy with networking, He loves collaboration and is proud of his resiliency.

Learning is Zig-zag's essence. He hops from project to project, each time exploring, advancing and then maintaining. He needs meta-analysis, and has to reflect on each project, not only on his own but with others in some social infrastructure, like the people in Silicon Valley. I think Zig-zag learns in cycles, short ones within a project, and longer ones consisting of a series of projects in a couple of years. His learning can be favoured by teambuilding and a good team leader. The leadership style must alter depending on the stage of team formation. His learning can be hindered by a team leader when he does not apply distributed leadership in a balanced, self managing team. Zig-zag has experienced that learning and living in projects does not produce a stable identity. His career generates "fragments in search of continuity", as I have read in a text by Karl Weick. Zig-zag always tries to get a sense of continuity. He needs to reflect on his experiences and learning every now and then, as well as reflect on the strategy he uses in going from project to project. He described me his dilemma as follows: "Shall I take the gradual path with a lot of continuity or shall I be a 'jumper' with a lot of discontinuity. Some say that jumping will favor my learning the most, because this never will frustrate my need to explore and advance". Zig-zag must have an open mind to the environment. He must get rid of all his filters. No one else can reduce his uncertainty. Without those filters he must deal fast with large amounts of information. Sometimes he feels overloaded and gets confused by this and feels a strong stress when incoming data do not fit in his mindset. He must be careful with this stress, because we all know it will narrow his view on his environment. He must cope in an adequate way.

Zig zag must study to be able to understand his partners, to apply the latest techniques etc. But it is so much! But he needs to be well informed to keep his competencies at state of the art level.

Zig zag participates in education for the maintenance of his skills and his expertise. Zig-zag decides himself about the participation. He also wants to use it for reflection on projects and his strategy, and sometimes he hopes he can find a bit more stability. And: strategies for coping.

Well folks, that will be all. Four stories, four male characters. I think nowadays you can get all these patterns within one group or course. And I think none of these patterns will vanish, the variety will increase! Go out now and draw your conclusions. Will it be the same negotiations, will it lead to identical learning contracts and learning plans? Will you make the same kind of exercises and instructions for Salty, Mark, Prof and Zig-zag? I doubt it...., but this is not my expertise.

Implication for negotiations

I accept this invitation of John Hunter. Work, transactional environment and context produce variation in the demand for learning among the highly educated, as these four stories suggest. Each story seems to represent a different perception of an economic 'game'. Each game produces a different player. This important when we have to negotiate about learning. We will have to deal with a different reason for participation in a learning arrangement and a different expectation of outcome of participation. In figure 1 I summarize these differences.

Figure 1

	Salty	Mark	Professional	Zig-zag
The game they are in	Business cycle, prices, position	Success, market share, price, velocity	Learning, reputation	Quality, cooperation, prestige of projects
Key role	Sponsor. Learner = consumer	Mixed	Ruler: professional body. Or: mentor	Learner = Client
Why go to a course?	Better functioning Preparation to new function; Rite of passage; Support for migration	Improve competencies; Support for migration	Learning of standards; Preparation to new tasks; Support for migration	For new content and improvement of communicative competencies; Support for migration
Outcome expectation	Guarantee for better functioning Better positioning	Better understanding of clients & markets	Content, credentials, Networks	Reflection, identity, networking

Any conversation to clarify the demand for learning and the negotiation on participation has to deal with the differences. Negotiating a course within the story of 'Mark and his mates' will be an entirely different discussion than a course for 'Prof' and his colleagues. Mark wants a quick decision, he wants to be sure about the speed of learning and be sure about profitable outcomes. Prof is relative slow in his decision and wants to be sure about the level of the content.

A discussion on arrangements that must be complementary to the practices of 'Zig-zag' will be something else than a discussion on arrangements for Salty and his fellow functionaries. Zig-zag will be an experienced negotiator and understand that he has to adjust to the learning arrangement. Salty will be more instrumental: someone else will negotiate his learning opportunities.

Implication for designs

Designs of learning arrangements off-the-job must relate to the various games, different ideas about the outcomes, about the quality of a learning environment, differences in learning dispositions and in participative behaviours and must contain different opportunities for certain (sub)themes people want to work on. In figure 2 I summarize some key elements of the four stories.

Figure 2

	Salty	Mark	Prof	Zig-zag
The game they are in	Business cycle, prices, position	Success, market share, price, velocity	Learning, reputation	Quality, cooperation, prestige of projects
Quality	According to general standards	According to client standards	According to scientific level	Quality is judged with process categories and outcome
Learning disposition	Often obstructed by organization	Agency disposition	Oriented to content	Seeking identity, need for reflection Meta-analysis of projects
Behavior	Used to strict definitions, homogeneous roles	Used to autonomy, homogeneous roles	Used to autonomy, hybrid work roles	Used to work in groups, hybrid work roles
Themes	Political games, perhaps waiting for new position	Success or exhausted	Perhaps forced migration, redundant specialty; change	Volatility, too high speed learning, perhaps effects of

			gear between activities	too long same kind of projects
Knowledge	Situated, related to company	Situated, related to markets and development of products/services	Refined set of competencies, dependant on discipline	Refined set of competencies, dependant on variety of projects

These criteria (relating and complementarity) might suggest that designs of learning arrangements must be 100% aligned with the work practices or even copy the culture of work: a typical design for Salty would be thoroughly constructed and instrumental to the goals set by the negotiations, a design for 'Mark' would be high speed, a program for Prof would be of high conceptual level and a Zig-zag program would consist of working in projects.

This suggestion is not correct. We sometimes need to organize arrangements that do not align at all with the learning in work, like a transitory room, providing special opportunities to support transitions. Why? Behaviour at a certain stage in the career will not be productive in a next stage or in another work context. Also behaviour that seems to be productive in work can be counterproductive in the learning situation. The learners will need some time to recognize this and also to find a new approach. The learning arrangement must provide room for such behavioral experiments. We prefer to speak about this in terms of invitations or affordances rather than as forced 'unfreezing'. These invitations can be very different compared to the daily work practice in the four stories.

Salty might get an invitation to reflect on his present behavior and to understand and experiment with behavior that he will need in his new work roles, like playing with political skills (Block 1990). The arrangement must provide surprises that suggest discontinuity and also encourage him to take risks. The arrangement must contain a lot of psychological safety to support this.

Mark might get an invitation to free himself (temporarily) from his urge for individual achievement and experiment with communion. Mark might discover other ways of relating to clients than through the lens of 'sales'. Not because those are better, but having access to other programs might provide him a better balance in his contacts with clients and markets.

Prof might get an invitation to break loose temporarily from content and get more contact with process dimensions of interpersonal contact, engage with other actors like customers rather than with the content, the methods and quality criteria of his own discipline.

Zig-zag will be invited to practice with frequent switching between communion and agency (Weick 1996; Marshall 1989; Bakan 1966), between discontinuity and continuity, to deal with stress and arousal as an effect of the lack of boundaries and filters, but maybe he will learn the most of developing his personal prominence (as a complement to his collaborative skills).

Of course this is not a plea for a rigid (market) segmentation. Varying invitations can be organized as a program, but of course also within a program. A design that must fit to actors from within all four stories, will be a very rich learning arrangement. The participants certainly will need some support to find their way in such an abundance of learning opportunities to the ones that have been designed especially for their own demand.

Conclusion

Providers of advanced education for highly educated people like universities develop new strategies to integrate learning and work. To gain success they have to free themselves from the domination of the discipline based programs and their underlying concepts like the standard definition of the users. To design complementary learning opportunities for people that already learn in work, designers must know the practices of learning in work very well. These practices of learning of higher educated people are largely a black box. In this contribution I used the model 'context and transactional environment' to open this black box. I used some sub questions. These form together a loosely coupled framework. This framework generated four stories of (male) higher educated actors. I described some implications of these four stories for the negotiation processes and the design of learning arrangements. This framework clearly needs further development. The political, technological and ecological dimensions (Van der Heijden 1996) related to learning in work and in formal settings will need more attention and must get a place in framework and the stories. It must be refined for the women and part-time workers (Sekaran & Hall 1989; Marshall 1989). We must also experiment with other forms than stories like other genres or even non-sentential representations (Thagard & Shelley 1997).

The stories we have here are an orientation base for designers, i.e. a tool that a person uses to fashion his or her own understanding of something, to evaluate it and to solve tasks connected with it (Engeström 1995:57). With these stories in mind it is hard to talk about learning in work anymore without asking: work in what context, what are the learning activities in work and how do these affect the demand for learning and the learning disposition? The use of the stories in their present state might prevent reductionism. This will become more important in the

near future. Companies and with them work globalize. The force fields that surround learning activities in work change. Designers of learning arrangements cannot afford to stick to the assumptions of the industrial world that used to dominate the work systems. Neither they can go on within the assumptions of the world of intellectual resources that dominated the thinking about learning. They have to be very sensitive. Within one state, county, industrial district, city or even company, designers will come across considerable differences: learners from all kinds of 'worlds' will enter the system for formal education. Instead of reductionism, designers will have to make learning arrangements that comply to the criterion of requisite variety (Smid 1999a).

This means that we stop to mould all highly educated people in the forms that academia provides us. This is in the self-interest of the providers of learning arrangements. Learning curricula for participants with work experience and at least a first degree give access to the outcomes of the learning in work, e.g. to the 'mode II knowledge' (Gibbons et al 1994). Providers (like academics) and the learners (the practitioners) can cooperate to make situated knowledge explicit and develop it further for transfer. This can lead to more profound knowledge of practice and to the development of new research questions. If learning environments are places where experienced academics meet people from other 'worlds', we create an opportunity for an enrichment of the academic knowledge: it can be 'tested' in different contexts. Universities who go on with a definition of their students as not-having-the-right knowledge or as have-a-problem-with-learning cut themselves from this possibility.

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Introduction

A commonly held, and somewhat cynical view of higher education, is that theories are taught at university and 'real' learning happens some time later in the workplace. In the age of 'lifelong learning' where adults are encouraged to enter and re-enter learning at every point in their lives this dichotomy between academia and the workplace needs to be bridged. Information and Communication Technologies (ICT) offer considerable potential to enable this to happen, to link theory and practice, and to enable the curriculum to be re-designed, unleashing new opportunities for quality learning (Staley & MacKenzie, 2000a).

Kolb's model of experiential learning (Kolb, 1984) links theory (abstract conceptualisation) to experience (concrete experience) through two very important stages in a learning cycle which Kolb refers to as 'active experimentation' to plan for experiences and then 'reflective observation' to reflect upon how theories relate to experience. The intention of this paper is to focus upon the reflective observation stage of the cycle and to give an account of how technology has been used to encourage and enhance the quality of students' reflections.

Boud, Keogh & Walker (1985) refer to reflection as 'an important human activity in which people recapture their experience, think about it, mull it over and evaluate it.' The tendency therefore is to think of reflection as a quiet personal process that goes on in the individual's head in isolation from others. However, Kemmis (1985) argues that this is not the case; reflection is both action oriented and a social process as its content arises from a socially constructed world of meanings and significances:

When we stop to think – to reflect – we do so in order to take stock of something that has happened, in order to prepare ourselves for action, or (usually) to do both. Reflection is a dialectic process: it looks inward at our thoughts and thought processes, and outward at the situation in which we find ourselves; when we consider the interaction of the internal and the external, our reflection orients us for further thought and action. Reflection is thus 'meta-thinking' (thinking about thinking) in which we consider the relationship between our thoughts and action in a particular context.

As noted by Candy, Harri-Augustein & Thomas (1985) reflection often begins with someone talking over his or her ideas with another person and using them as a 'sounding board'. This observation led the authors to develop the notion of a learning conversation in which there is a dialogue in which learners reflect upon experiences. To facilitate the process of reflection, Candy et al created a behavioural record (such as a video tape) of the learner in the learning situation and then analysed this with the learners conversationally. However, such approaches can appear threatening for the learner, and indeed any form of critical reflection of oneself can be a difficult and exposing process.

Learning which involves a change in self-organisation – in the perception of oneself – is threatening and tends to be resisted. (Rogers, 1969)

As a mechanism for reducing threat, the authors of this paper suggest that multimedia technologies can be used at the experience stage of the learning cycle to create virtual representations of practice. Online conferencing can then be used at the reflective stage to provide a platform for considerable dialogue to take place; the assumption being that it is easier to be critical of something that is fictitious than to expose one's own weaknesses. Would being reflective from a 'safe distance' lead to an internalisation of issues and subsequently make it easier for learners to critically reflect upon their own practice i.e. can the process of self-reflection be improved by an intermediate step? Given that many authors have reported low participation rates using conferencing (for example, Mason 1995), is creating a virtual context to which the whole group can relate to (as opposed to a series of individual contexts) an effective approach for promoting discussion? These questions are addressed by an analysis of conference contributions.

'Problems at Crumpton' case study

As part of a four year Computer Supported Experiential Learning project at the University of Central England, an online spoof university called 'Crumpton' (<http://lmu.uce.ac.uk/crumpton>) was developed to illustrate a problem-based approach to professional development for academic staff. The design rationale and pedagogic principles underpinning Crumpton have been described in Staley & MacKenzie (2000b). In essence, problems faced by Crumpton University are situated in real world contexts using video clips to provide shareable representations of practice. Examples include a conflict between external examiners, a mutiny in the staff common room, an employer questioning the skills that Crumpton students develop, inappropriate teaching methods, and student disquiet. Once academic staff have analysed the problems there is a structured study programme to follow, and then a conference, in which to collaboratively discuss the issues and suggest tentative solutions.

Method

The 'Problems at Crumpton' case study was set as an assignment for university lecturers studying a module entitled 'Designing Courses to Support Self Study' as part of a Postgraduate Certificate of Education and Professional Development (PGCEPD). This represented a portion of independent study in between traditional face-to-face teaching sessions. The conference was summatively assessed and points were awarded (against strict criteria) on a weekly basis for the contributions made during that period. Once a threshold of points had been reached a pass was awarded and contributing to the conference became purely optional.

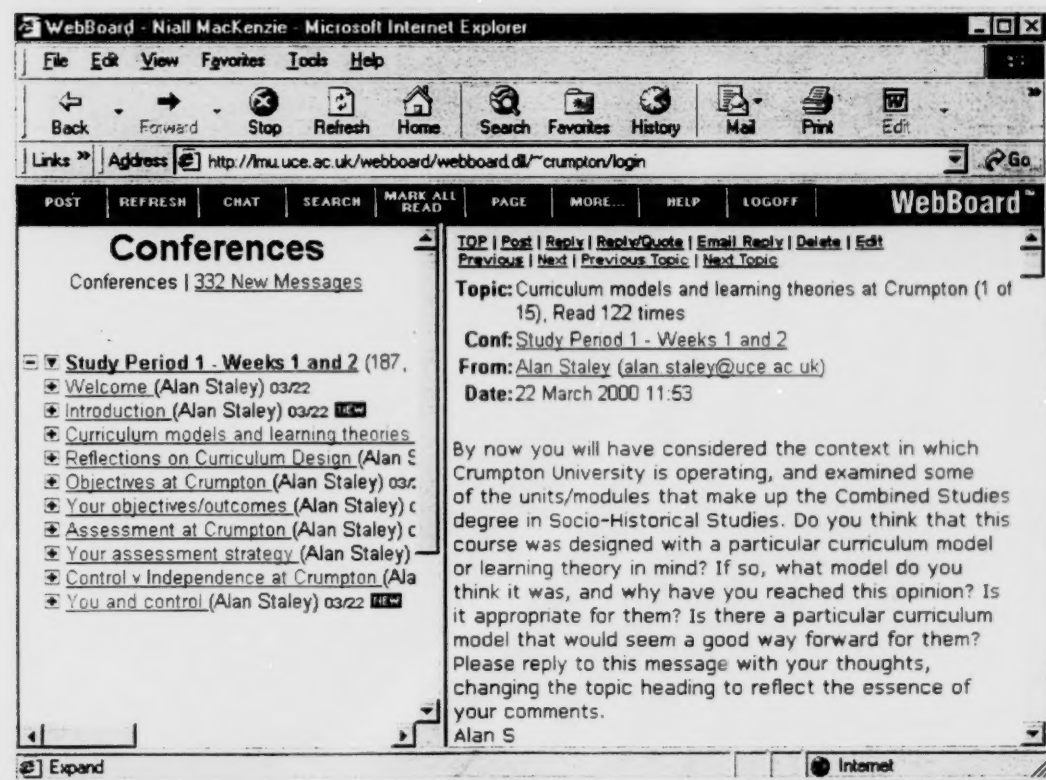
Sample

The module was taken by 32 academic staff (19 female, 13 male). For most of these staff the course was compulsory due to limited teaching experience, although a small number of very experienced staff volunteered to take the course. There was a mixture of full-time and part-time staff, and a diverse range of ICT skills within the group. Access to technology also varied considerably. To ease some of the potential problems and to support each other staff were organised into action learning sets based upon ICT skills, access, and location of campus.

Procedure

Initial topics for discussion were divided between issues at Crumpton and issues that related to the lecturers' own experience. This structuring of the conference for study period one is illustrated in Figure 1.

Figure 1. Initial topics for discussion in study period one



Points could be gained for contributions to each type of topic, but there was sufficient flexibility in the marking scheme to allow staff not to contribute to particular topics if they did not want too. Staff could also gain points for raising new issues, replying to each other, and posting details of relevant online resources.

Each week the contributions were scored against each of the five assessment criteria shown in Table 1.

Table 1. Assessment criteria for conference contributions

a)	Contribution to the conference in response to the tutor's tasks within each study period that relate to the student's own experience of curriculum design, teaching or learning.
b)	Replying constructively to another student's contribution in the dialogue. Being supportive and inviting further dialogue.
c)	Contributions to the conference in response to the tutor's tasks within each study period that relate to the problems at 'Crumpton'. Diagnosis of problems and tentative solutions.
d)	Raising an issue germane to the problems at 'Crumpton' or the subject content of that study period, that has not been previously raised by the tutor or another student.
e)	Bringing to the class's attention an item of relevant Web material not already indicated in the study programme.

A weekly deadline for contributions was set at midnight Sunday. The tutor could award up to 5 points against each of the assessment criteria (irrespective of the number of contributions made), making it possible to gain 25 points per week. No more than 25 points could be scored in any week thereby encouraging regular contributions.

Approach to Analysis

In a separate publication a quantitative analysis will consider the impact of assessment on conference contributions. In this paper a qualitative approach has been adopted using extracts from contributions to illustrate and illuminate the process of reflection and the value of virtual experiences in enhancing this. Rather than grouping contributions into categories, an attempt has been made to develop a flowing argument, revealing the initial impact of virtual experiences in provoking discussion and progression towards the subsequent depth of thought and reflection that follows.

The authors have been careful to ensure that no individual member of staff or course can be easily identified, although in most cases the contributions are taken verbatim from the WebBoard conferences. Where the sense would have been completely lost by typing errors, the authors have made some very minor adjustments, however all grammatical errors have been left as typed.

Analysis And Discussion

Over a period of four weeks in which staff were seeking points to pass the assignment, 370 contributions were made indicating a high level of participation. The first two weeks generated 320 messages, while the last two weeks added 50. The difference can be directly attributed to staff reaching the required number of points to pass the assessment. While assessment could be considered to be a driving force behind this level of participation the vividness of Crumpton clearly also had an impact:

Reviewing the clips of the useless lecturers — oh so true to life! — reminds us that speaking is a core competence for a lecturer.

Some staff responded very strongly to video clips as indicated by this contribution:

I think that the teaching staff we saw in the video clips are the dregs of our profession. They are the lazy, self-centred and unfortunately unsackable elements who needed to be given a reason to exist by virtue of their tenure.

This contribution perfectly emphasises the ability for conference participants to use the 'safe distance' provided by virtual scenarios to make some extremely provocative statements. Imagine if this contributor was referring to teaching staff at his/her own institution? The contributor was being deliberately provocative, as they admitted later in the discussion but nevertheless, the video clips of Crumpton lecturers had provided a neutral platform from which such comments could be made.

The bluntness of the language when referring to virtual characters was also notable:

There is no obvious student independence or interaction. The material seems regurgitative and Prof. monotone makes a bad session worse (I must remember not to drone!).

Making such personal attacks on the fictitious characters seemed to make it easier for staff to then reflect upon their own teaching with a great deal of honesty:

Correspondingly have we not all had times in our career when perhaps we did not represent the epitome of our profession (I certainly have). Thank goodness I wasn't sacked on the spot but encouraged to reflect and learn from what were (or are) usually difficult circumstances at the time. I'd like to know I'm not the only one who isn't perfect all the time.

The same contributor went on to make a further courageous disclosure later on, that was also startling in its honesty.

An example, I think I had my first student fall asleep in a session this afternoon. Is that a reflection on me or her or neither?

Staff were clearly relating video clips to their own experience and internalising many of the issues being portrayed in the virtual world of Crumpton. Would these candid remarks have been made without the 'trigger' of Crumpton? Making revealing contributions in front of the whole group can be difficult enough face-to-face; doing so in writing given the permanence of a conference can be sufficiently threatening to deter contributors (Hardy et al, 1991) or lead to disappointingly trite contributions. The humorous setting for Crumpton, the caricatures and deliberately exaggerated video clips seemed to have set the tone, enabling discussion to take place.

Not only did the discussions begin to relate to more personal experiences, other staff thought more widely and hence deeper discussions developed:

I think, there is more to this than your comments suggest. To simply shoot down the staff (a response that is indicative of why morale amongst teaching staff in the UK is so low!!) does very little to get to the root of the problem. The fact that the staff are not involved / interested / inspired by the hotch-potch course is reflected in the teaching rather than vice versa. Of course, they need to think very seriously about their teaching methods / styles but how much of this is a symptom of the poorly designed / run course rather than a cause of it?

The contributor that referred earlier in the discussion to the "*dregs of our profession*" later confirmed their role as devil's advocate but the controversial opening statement certainly generated and enabled discussion, albeit fairly polarised into "for and against" camps.

I am glad to have provoked a lot of thought in this area...and while I think we all agree that Crumpton as an institution needs to sort this course out, we should not be defending extremely poor teaching.

Video clips of students at Crumpton and supporting case material made available in the conference by the tutor also triggered some very thoughtful responses. Some fictitious characters almost took on their own persona and became like 'soap' characters:

I'm not sure if my views about Barry the Brummie are a little controversial. He does seem to be struggling with academic life, and I feel that, as a university, our responsibility to people like Barry is at a much earlier stage... ie recruiting stage.

Is this the best course for him? He has some interest in history but is this enough? Was his (in)ability to write checked out at an early stage - is there help available for him to improve his written skills at Crumpton? Is he aware of them?

More broadly - is the lack of money and not being with his family detrimentally effecting his performance? Were there part-time options or distant learning courses that would have enabled him to live at home with his family and work whilst trying to 'better' himself?

It seems to me that he has a basic motivation but that this is being sapped out of him by a course which is beyond his abilities and making him unhappy. It is not just that Barry is unlikely to achieve academic brilliance at Crumpton. Part of the aims of the further education experience is surely to instill confidence and perpetuate motivation / interest / enthusiasm. Barry is not likely to feel he is getting anything out of the course at all (he is failing and seeing no reward for his efforts) and that is what is very sad about the whole scenario.

While the previous quote reveals a member of staff writing about a fictitious character in a very personal way, the next quote reveals just how powerful Crumpton had been in helping staff reflect upon their own experiences:

Although I am out of the 'game' [this member of staff no longer needed to contribute for assessment purposes] I had some thoughts on Barrie the Brummie. I did my degree as a mature student and had the usual financial concerns plus three children to think about and I think that I got through for two reasons firstly the obvious self motivation, I wanted to complete the degree but

more importantly some although not all of my tutors were sufficiently motivated and more importantly were 'good teachers'. the interesting thing is that the lecturers I had who were good had all done some form of PGCE and those that were bad had just gone straight through from undergrad to post-grad to lecturer with no real time to think or learn about the process of learning.

Staff were able to relate the scenarios presented at Crumpton to their own specific courses and then project the arguments in a more abstract way. The following contribution raised the issue of entrance routes at Crumpton, and made the link to progression rates considering his/her own course. This generated 20 replies in what became a very lively discussion.

On our course we have a wide range of students. Over the years student progression has been monitored in relation to students' entrance qualifications. The results have shown 90% success for A level students and less than 50% success for Access course students.

I would be interested to hear other peoples experiences particularly in relation to professional courses.

There are clearly a range of entrance routes at Crumpton and this is probably true of all our courses. Widening access to higher education is clearly important but it presents many challenges to teaching.

Traditional approaches to learning were explored and expanded using the Crumpton scenarios as a starting point. One topic considered the behaviourist verses the constructivist approach to education. While many contributions were of the 'I'm a constructivist...' type, others approached the question more deeply, reflecting upon their own experiences, challenging certain tutors' views, and thinking outwardly about the consumerisation of education.

All the evidence, from the names, reliance on lectures, etc, suggests that the tutors rely on 'transmitting' knowledge. The assumption seems to be that this is 'bad'. But teaching was like this when I was at university, when standards were demonstrably higher (??), and students had to rely much more on their own resources than they do now. Remember 'reading for degrees'?

Moreover, many of my students audibly groan when I introduce the next 'workshop' and expect them to contribute. Many of them genuinely appear to want to be 'spoon fed', and don't want to make the effort themselves (OK, maybe the minority, but I'm exaggerating to make the point here - you might have noticed).

As 'customers' do we give them what they want (which has worked in the past after all), or 'make them have it' in the belief that getting them involved and learning experientially is good for them (which, in part, it probably is)?

The next quote is a reply to the above that illustrates how deeply some staff were reflecting during the conference, using academic referencing to support a well constructed argument.

..... has raised an interesting question: if students (customers) want a behaviourist approach, why not let them have it?...A not-for-profit organisation such as a university has many important stakeholders whose needs have to be met (Wheelen & Hunger, 1995), e.g. funding bodies, professional institutions and employers. The last of these want a willingness to learn (Harvey & Green, 1994), and, by implication, the application of the principles of learning gained from higher education in a variety of circumstances found in employment. This will not be achieved with a behaviourist approach alone.

Many of the examples used so far have illustrated developed and structured debate taking place in a collaborative electronic environment. However, the power of the debate becomes further strengthened when the ideas being put forward are actually put into practice. Staff acknowledged that they had digested and reflected upon the discussions and in some cases changed their thinking and practices. Obviously it would be a bold claim to attribute this to the conferences alone, as they formed only a small part of the PGCEPD course, but some staff did make this link implicit.

The first example of this shows a member of staff realising what it is like to be a student again, and subsequently changing their practice.

One aspect of this PG Cert Ed course has led to a greater understanding of and empathy with my students: that is getting courseworks in on time. I used to berate my students for leaving their courseworks until the last possible moment on the basis that they had a timetable for coursework submissions and plenty of time between the launch of a coursework and its submission. All that was

required was good time management. I am leaving the PG Cert Ed submissions [conference contributions] until the last possible moment because there are so many other activities to be accommodated. So, I'm no longer merely criticising students, but offering assistance as to how they spend their time in a very productive manner. Of course, I am being hypocritical because I know that I behaved in exactly the same way when I was a student. Is it a case of do as I say, not as I did?

Another contribution takes this a stage further and reveals that Crumpton has had a sufficiently powerful effect to cause a change in values concerning the educational system. The authors suggest that this is a good example to illustrate the highest order outcome in the affective domain of Bloom's taxonomy of objectives (Krathwohl, 1964). This example is also interesting in that the member of staff refers directly to the "habit" of conferencing despite already passing the assessment for the conference 'game'.

This week I was in the middle of a chalk and talk lecture (wearing my expert hat) when I began to feel very uncomfortable. Looking out at a sea of faces that were rapidly glazing over I almost came to a complete halt. I tried convincing myself that this was one of the topics areas that had to be approached in this way. The students needed to know about children's developmental phonological processes, a topic which is like anatomy, one of those unavoidable term-laden subjects that professional needs dictate they learn. I told myself that this was not an area that could be approached from a 'problem-based' learning strategy. However, after watching the Crumpton 'elite' I am not sure whether I can justify my claim, I am beginning to feel that the whole system of education we currently rely on has its roots in a 20 century ideology that stems from the 'gatekeeping' of an intellectual elite. I think that there has to be a better way of teaching my subject which consists of far too many formal lectures, and a great deal of surface learning by the students. Yes they pass the exams but they find it hard to use that knowledge when they go out on placement.

I think I'm only just beginning to appreciate the amount of deep learning going on in this course because to get the students to do 'deep learning' requires constantly reflecting on your teaching sessions and 'doing' a lot of deep learning yourself in order to prepare the problem based learning curriculum.

Anyway although I'm longer in the scoring game there is something about thursdays prior to Harbourne Hall that makes me feel I should visit Crumpton (its becoming a habit)

This final example was rewarding for the authors in that it referred to the benefits gained from the online discussions. It is also interesting to note the implication that the face-to-face sessions were of equal value to the online discussions. For this individual, the technology has enabled a deeper understanding of the subject and the collaboration has enhanced the learning experience.

I know a lot of my former colleagues at an 'old traditional' University have scathing views of 'new Universities' but I have to say that another benefit of doing this PGCE is that I have met with a lot of very able teachers and have to say I have been impressed with some of the input in both the Harborne Hall sessions and this web board.

Conclusion

The online conference generated considerable participation, and while the assessment necessitated this, the tutors considered the contributions to be of a high quality and not simply an indication of a strategic approach to the assignment. Many contributions were of a deeply reflective nature revealing self-analysis, commitment to changing practice, and a great deal of honesty. Crumpton and the virtual representations of practice within it, appeared to act as an 'ice breaker' provoking discussion and enabling staff to comment without feeling in a threatening environment. It was clear that connections were being made to the courses and characters at Crumpton and this subsequently made staff think deeply about their own practice, courses, and indeed institution. The authors of this paper therefore conclude that reflecting upon virtual experiences can be a valuable step in promoting discussion in an online environment, and can ease the process of critical self-reflection in the context of teaching in higher education.

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ORDERING FROM THE MENU: AN ETHNOGRAPHY OF RESTAURANT DOCKETS

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"Everything has to be covered by a voucher".
(Orwell, 1984)

Not surprisingly, given that it assumes a significant part of their work, much of the research on pragmatic writing has dealt with that of professionals, with analysing the rhetorical devices manifest in their reports, policies, letters and memos (Bazerman and Paradis, 1991; Couture and Rymer, 1993; Smart, 1993). In other domains of work, the important communicative competencies are held to be those afforded by conversation and utterance (Engeström and Middleton, 1996). Yet even in these domains, most workers utilise a range of inscribing techniques to control the information traffic in their workplaces.

It is with providing an account of such techniques that Latour's work (1987; 1990) provides a useful point of departure. His ethnography of inscription emphasises the degree to which semiotic practices are central parts of scientific activity and are galvanised around the "immutable mobile". This is a mode of signification with special powers of fixation, which enables information to be conserved as inscription, mostly written but also pictorial and graphic. That the forms of inscription that are used in this conservation also form radical distillations of reality makes them mobile and enhances their portability. This means that providing the mobiles involved are clear and durable, they can survive the processes of displacement across space and time, without suffering degradation. In this sense, the inscriptions act as mnemonics, providing a record of events and places which would otherwise be prone to the errors and distortions of memory; in another, they are objectifying, providing a mechanism for achieving optical consistency about what was recorded. But of more import is the fact that such inscriptions enable scientists to act on a periphery from the centre, and to 'visualise' the remote without having to move from this centre. Moreover they do not have to be repeated for they have lasting power and once drafted can be refined and amended.

Engagement with Latour's "immutable mobile" has been lacking in studies of workplace communication—something this paper endeavours to redress. It examines restaurants and argues that their practices and social relations are mediated through a range of documents, including menus and dockets—the subject of analysis in this paper. They provide the basis for sequencing restaurant activity across its various spatial and social domains, and are an integral part of a restaurant's textual and information economy, ensuring that meals are prepared and assigned appropriately. The prevalence of such "situated writing" (Witte, 1992) means that the majority of communication in a restaurant is mostly of a symbolic and semiotic kind. It has been suggested that friction and fractiousness in a volatile social environment is thereby mitigated (Marshall, 1986; Whyte, 1948).

Although restaurants are dissimilar from laboratories, they are, nonetheless, epistemological environments in which the traditions of culinary culture are transmitted. These traditions, which are embodied in its environment and played out in atmosphere of theatre and fantasy, give distinction to the homely practices of eating (Bourdieu, 1984; Finkelstein, 1989; Gardner and Wood, 1991). Yet the field of practice in which this gastronomic theatre is staged is dependent on systems of information management and transfer. Many of these systems are text-based and utilise a range of inscriptionary practices, variously organised and located to meet the exigencies of practice. For example, most restaurants maintain notice boards, usually close to telephones, and on which various interfacing texts such as business cards are displayed for immediate reference and retrieval. This exemplifies the ways in which texts are 'worked' into an environment, and placed in such a way as to optimise their utility.

This placement also reflects the social boundaries in what is a compact but very hierarchical organisation (Whyte, 1949; Fine, 1996) with clear divisions of labour. Much of the need for boundary maintenance flows from the fact that kitchens are often very cramped spaces, to which the serving staff must be given only limited access if efficiency is not to be impaired. In such circumstances other forms of communication apart from verbal ones must be developed if 'orders' are to be passed on from the dining floor to the kitchen. Thus the social geography of the restaurant leads to its own distinctive textual practices. The floor, for example, is a site of writing, where orders are taken and assigned, where bills are calculated and paid, where the activity of the restaurant is scripted, regulated and monitored. The kitchen is a site of gastronomic production, where meals are prepared and disposed of, where scripts are read, enacted and given materiality. Thus various activity scripts provide the textual scaffolding that underpins the preparation of meals and ensures that this proceeds in accord with restaurant protocol.

For this protocol or "event sequence" has a distinctive profile. It occupies a particular part of the day, such as lunchtime, and involves a meal with several courses, often served with wine and other drinks. These courses are taken in a particular order such that an entrée is served before the main course and all the courses at a particular table are served together. This is different from other eating establishments such as cafés and sandwich bars where the processes of preparation are less specialised and the event sequence of meals less ritualised. There are other

significant parameters that impinge on this protocol such as the size and capacity of the restaurant, which limits the number of diners who can be accommodated at any one sitting. Hence the discourse of a restaurant is dominated by space-time concerns, which dictate the production and consumption of courses.

The menu occupies a pivotal place in a restaurant's textual environment. On the one hand, it provides an inventory of gastronomic options and their cost and on the other, performs a generative function. In most workplaces, restaurants included, there are certain texts that have special significance in terms of their capacity to mobilise, sponsor and engender action. Many of these catalytic texts are also portable ones, enabling them to be transported from one field of practice to another and to act as a textual envoy between one specialist practitioner and another. In this respect, a menu is a catalytic text that gives authority for engendering action at a distance from its point of issue or provenance. This catalytic function is symbolically underlined through various forms of signifier augmentation that are attached to menus. Thus menus, particularly in the case of expensive restaurants, are usually printed on superior papers and bound in ways that reinforce their textual importance. This enables them to be differentiated from more mundane documents in the restaurant's textual environment. Much of the need for this symbolic differentiation also derives from the fact that the menu has special epistemic importance in terms of its reference functions—as an inventory text listing the range of dishes available in a restaurant as well as their cost. These functions also overlap with the fact that a menu is also a text of allure—one that acts as a mediator between a restaurant and the outside world.

But a menu is more than just a textual appetiser. For, as was suggested earlier, it has the capacity to trigger a sequence of culinary actions. These begin with the issuing of a menu to the diners ('covers'), who are given time—though not too much—to decide on their courses. Indeed, eating in a restaurant involves optimal timing and ensuring that the interval—usually about twenty minutes—between taking an order and serving it is neither too long nor too short. Waiting too long can induce impatience; just as being too pressing can make diners feel harassed and under notice (Fine, 1996).

In the meanwhile, the diners in a licensed restaurant are offered something to drink, usually as an 'entrapping' device, to stop the covers upping and leaving. Similar processes occur in a BYO restaurants, where bottles of wine or beer are opened almost immediately or are ferried away to be consumed at some later stage. The restaurant plays on the fact that it would be an embarrassment for a table, having had a bottle of wine opened, to up and leave because the menu was not to its taste or its atmosphere was disagreeable.

The processes of initiating an order are subject to textual specification, and vary from restaurant to restaurant. When staff are hired, they are issued with a manual specifying floor service procedures. This includes the standards of dress and hygiene that the staff is expected to observe, the ways in which diners are to be addressed, and so on. Thus the manual serves a normalising function, ensuring that the standards of conduct across the waiting and kitchen staff are consistent. This also means that the hospitality rhetoric within the restaurant is relatively distinctive yet uniform within its confines.

Yet there are elements that transcend this particularisation and that are employed across most restaurants. One of these is the "control system" and to which textbooks on restaurant management give extensive coverage—thus helping to perpetuate the main elements of the system (See Anderson and Blakemore, 1991; Campbell, Montgomery and Jobbins, nd; Douglas, 1976). One element of this system is the "waiter's check" (sometimes called a 'voucher' or 'docket'). This is a form of diagrammatic space, which enables information of a pre-specified type to be entered and, once recorded, distributed to the various parts restaurant environment. The check is part of an internal courier service operated by the waiting and kitchen staff, and whose efficacy depends upon the accurate transfer of information.

Thus the check (see Figure One) has particular catalytic value in the restaurant where it is has a critical function in terms of its power to 'order' meals from the kitchen and to act as a 'guiding hand', overseeing its operations. For, as the epigraph suggests, without a covering check the chef has no authority to proceed with a meal. Moreover, any subsequent modifications such as a meal being returned because it was not acceptable must also be covered by a check! Thus the check acts as an audit mechanism, ensuring that all the various elements that contribute to a meal are covered by a check. And as fiddling is not uncommon in restaurants (Marshall, 1986), this helps to deter fraudulent activity! Hence each check has a serial number (see Figure One), enabling its circulation to be monitored, and each book of checks is locked away, lest it fall into the wrong hands, when not in use (Douglas, 1976). In other words, the check acts as a token of exchange in the restaurant, acting in lieu of actual money while a meal is being prepared and consumed.

These checks also have an iterative property, which is built into their copying architecture, and allows them to be circulated throughout the restaurant. But because the checks must be portable and 'pocketable', their diagrammatic space is necessarily small in area, which means that their users must resort to abbreviated inscriptions—frequently specified in the manual of procedures. Typically, 'w' stands for 'with', 'g' for 'green', 'M/R' for 'medium rare', 'e' entrées, and so on. The existence of these abbreviations as part of the common language of the staff reduces the scope for confusion between the kitchen and the floor. But in an environment in which as many one hundred meals might have to be prepared in a mere ninety minutes (Fine, 1996), the imperative for such linguistic economy is strong on another account too: waiters do not have the time to be 'prolix' when abbreviations will suffice. As others have noted, such economising strategies are strong imperatives in situated cognition (Scribner, 1986).

<i>food for thought</i>	
sydney's premier restaurant	
Table No. T10	
No. of Covers C4	
2 x n/e	
1x soup (2)	
1xg. salad (3)	
2xSalmon (2)-1 no rice w salad	
1x Steak—M/R (3)	
1 x Noodles (4)	
Date/Time	28/6 8pm
Served by	S
FFT213890	

The waiter's check shown above is not an actual order, but it is quite typical of the kind to be found in most restaurants

Figure One

The check also acts as a filter, reducing the exchange between a waiter and her table to its bare essentials. Typically, for example, such an exchange would include, as required, an apposite greeting designed to make the diners feel at home in the restaurant. This is part of the tactical preamble occurring at the table, and which leads to a process of familiarisation whereby the waiter 'gets' to know its semiotic traits. This allows orders to be associated with particular covers and assists in the subsequent allotment of dishes. The central part of the exchange occurs when the table is invited to order. This might involve some additional request—not uncommon in this diet conscious age—requiring a variation to a particular dish such as not having rice with the salad ("no rice w salad"). Much of the exchange is directed through the menu and usually relates to the ingredients of particular courses and to which diners might have an aversion or allergy.

In order to ensure that the order is correct, and also to give the covers an opportunity to amend it, the waiter usually 'reads' it back, as it were, checking the accuracy of the check. At this point, and after noting when the order was taken ('8pm'), the menus are retrieved from the table and returned to their 'home'. The order is then ferried to the kitchen. In one sense, the removal of the menus along with any excess cutlery—because an entrée was not ordered—serves to 'de-clutter' the table but, in another, it represents a 'sign', understood across the restaurant, that a table has completed its order and is awaiting its first course. The envelope of the ordering process thus also encompasses a 'language' of objects, whose absence and presence signifies that a particular point in the meal has been reached.

But the check, which is linked to other elements of the restaurant's textual network, also enables a table's course choices to be 'mapped'. The check, for example, consists of six areas (see Figure One), four of which are assigned to specific types of information. One of these is the number of the table. This is preset and relates to another item of restaurant 'paperwork', namely, the floor plan of the dining area and which, in turn, is linked to the 'booking sheet' (see Figure Two). There is also an area on the check for the name of the waiter, to whom responsibility for a particular table, as part of her station, has been allotted. But the largest area of blank space on the check is that reserved for the order, which is generally compiled in terms of the sequence of dishes and allows for other relevant information relating to a meal, such as any supplementary requirements, outside the menu, to be listed.

But the order is compiled in such a way that other information about the covers is 'encoded'. One is their sitting order. Thus the order is set out in a clockwise sequence starting from the cover who is sitting closest to a prominent 'feature' in the restaurant such as a painting or a sideboard. The cover situated closest to this 'magnetic north' is designated number one, the next in clockwise order, two, three, and so on, round the table. The compilation of what in effect is a positional script eventually ensures that each course is served in accordance with the seating pattern of the table. In this instance then the method of inscription acts like a plan and is oriented to the exterior environment of the restaurant. The effect of this mapping is that through a process of rapid deduction, the numbers and positions of the other diners can, as it were, be figured out. This too then is an economising strategy, enabling more to be implied than described, and for the number of inscriptions to be kept to a minimum. Moreover, should the waiter normally serving a table be called away, then another can take over and reconstruct the course allocation.

Thus in Figure One—an order taken from a table occupied by four covers—the numbering of the covers is included in brackets, whenever pertinent (and sometimes it is not), to the right of each course. For example, it is of more pertinent in this order that two of the covers are not having entrées (2x n/e). Where these particular covers—one and four—are sitting is therefore irrelevant and does not have to be noted. In any case, this can be deduced from the fact that it is the two other covers—two and three—who are having a first course, one a 'soup' and the other a 'g. salad'. Moreover this information is also 'distributed' in the cutlery setting of Table Ten which was altered when the order was taken. The check and the layout of the table thereby mutually reinforce one another, illustrating the way in which the literality of the inscription is 'worked' into the environment and vice-versa. In this respect, the waiter's inscriptions do not stand-alone but 'conscript' elements of the restaurant context. Text and context thereby form a feedback loop—the one reinforcing the other, and vice versa.

But the various 'alignments' on the check are also critical in terms of representing the various stages of a meal. For example, the line through the top sector of the check signifies the separation between first and main courses. Once again, much of the information, which is expressed in a minimalist fashion, about the meal requirements of particular covers is implicit rather than explicit, and can be deduced from what is not inscribed as much as what is. Thus the check only provides information about the meal requirements of covers two and three. But through processes of deduction and the positional information that is also given, it is possible to deduce the orders of diners one and three. Thus by virtue of the position of the order on the check, it is cover four who has ordered a noodle dish as her main course and diners one or two who are having salmon dishes as their mains. And since the check notes that it is diner two who is having the salmon dish as on the menu, then it must follow that the first diner's salad is without rice.

The other important feature of the check is that triplicate copies, each of which is colour coded, are made—at least, this is recommended practice (Anderson and Blakemore, 1991). This enables copies of the check to be relayed from the floor area to three other important sites in the restaurant: the kitchen (blue), the drinks bar (white), and the cash desk (yellow). At these locations, which in some restaurants can be quite remote from the dining area, it is common practice for the checks to be 'posted' or spiked in a prominent place, allowing them to be easily retrieved for the purposes of referral. When the check is posted to the cash register area, it is usually placed in a system box, where it is categorised according to the table number, such that all the dockets emanating from a particular table are collected together and the processes of tallying the bill commenced. This box also provides a safe haven for the checks and ensures that should those circulating around the kitchen, a potentially hazardous environment for paper, are destroyed or stained beyond recognition, the checks are preserved elsewhere.

Thus the placement of the checks in the restaurant environment has significance in terms of the event sequence of a meal. When the checks are posted to the kitchen the head chef categorises them into two types: live and dead. The first signifies that a meal is in the process of being prepared; the second, that the meal has been served. Indeed unless a check exists to cover it, the kitchen will not issue a meal to the floor, and once it has been issued the check is cancelled to ensure that its 'catalytic' value is negated.

In the process categorising of the checks the chef takes the opportunity to synchronise the preparation of dishes, staggering some in order to ensure that each table receives its complement of dishes at the same time. This is practical consequence of the fact that some dishes take longer to prepare than others. As was noted earlier, much of the art of running a restaurant involves time management. The checks play a role in this management and enable the chef to project into the future the immediate demands being placed upon the kitchen. Thus the checks help to organise the work of the kitchen in such a way that the dishes are produced 'on time', with a minimum of delay. Thus whereas on the floor the checks have a spatial significance, in the kitchen they have temporal significance. Thus the chef constantly shuffles the checks according to the known cooking times of particular dishes. If a table, for example, is falling behind, the pace of service can be adjusted, which can be readily achieved because the time an order was taken was noted. The check not only enables the chef to intervene and change the temporal profile of a table's order but it also acts as a checking mechanism to ensure that meals are served with due regularity.

In conclusion. These textual practices are mundane examples of Latour's "immutable mobile" and form an integral part of the myriad activities that take place within a restaurant. They provide an information tracking system with a restaurant, which enables the progress of a meal to be monitored. The underlying principle of the information system is that of cognitive redistribution, wherein important information is "offloaded" and inscribed in preset forms of textuality (Pea, 1993; Cole and Engeström, 1995). It has been argued that this textuality also includes table settings which function as signifying 'tools' augmenting the information that is inscribed on the checks. Thus the textual environment of the restaurant tends to be an 'understated' one, heavily reliant on elliptical modes of inscription, half-on-the-page, half-in-the-world. Such apparently trivial instances of literacy cannot be discounted; their apparent simplicity masks the fact that they are economical collectors and distributors of information. As such, they demonstrate the way in which the practices of literacy and inscription not only impact on the environment of thought but they are also used to order practice and structure the operations of a workplace.

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CRITICAL LITERACY, CULTURAL INCLUSIVENESS AND TEXT SELECTION IN ENGLISH FOR ACADEMIC PURPOSES COURSES

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Introduction

The point of departure for this paper lies in my interest in the interconnections between theories of critical literacy and the selection of texts in EAP courses. Drawing, for example, on the work on literacy by McCormick (1994), on discussions by Benesch (1993; 1996) and Pennycook (1989; 1994; 1997) about the ideological positioning of EAP courses and on the writings of indigenous Australian authors such as Narogin (1990) and Noonuccal (1976), I intend to show how 'social identities and power relations ... become primary objects of analysis, critique and study' (Luke, 1996: 333) in the teaching and learning of critical reading practices in the EAP classroom. In order to do this, I will focus the discussion on a number of texts written in English about colonialism in Australia that I have used in EAP reading classes. Examples of texts include Elder et al. (1988); Clark (1986); Reynolds (1988); Morgan (1987) and Yunupingu (1994).

In these classes the pedagogical focus has been twofold: firstly, to use the texts as vehicles through which to discuss questions surrounding the notion of critical reading in academic contexts and secondly, to introduce students to topics relating to Australian colonial and post-colonial society. Critical reading here has the sense not only of simply interpreting texts but also of developing:

the knowledge and ability to perceive the interconnectedness
of social conditions and the reading and writing practices of a culture,
to be able to analyze those practices, and to possess
the critical and political awareness to take action within and against them
(McCormick, 1994: 49).

Such an approach to the teaching of reading has important implications for the types of texts selected for EAP courses. I will take 'Colonial and post-colonial Australian society' as an example of one of the themes around which I have designed tasks to develop the academic English language abilities of nonnative English speaking students. I will argue for the need to develop a theoretical framework that takes the work of writers in the field of critical literacy into account in order to re-conceptualise our approach to 'academic' text selection so that, as EAP practitioners, we can be consistent with and self-reflexive of our roles as academic gatekeepers of different types of knowledge. (While the focus of this paper is on developing a critical approach to reading it is important to point out that students are encouraged to adopt a critical approach in all aspects of their academic training).

I will support this position by highlighting the value of viewing literacy as a social construct and a political practice that has the potential to change existing social relations. Secondly, taking colonisation in Australia as a thematic example, I will discuss the ways in which indigenous and non-indigenous perceptions of colonisation have been presented in a variety of texts. Finally, issues concerning the meaning and implications of the term 'academic' will be raised with reference to the 'non-academic' and oral nature of indigenous writing. Using texts from my own teaching, I will attempt to highlight the importance of connecting such texts to the historical, political and cultural forces that exist beyond the confines of the classroom walls.

Literacy as social construct and political practice

There are a number of possible approaches that can be taken when discussing the concept of literacy. Over the past fifteen years or so there have been many studies into the literacy practices of different people in a wide range of situations. These studies have developed out of a variety of theoretical frameworks and have led researchers to focus on the implications of literacy at both individual and social levels (eg Scribner and Cole 1981; Walsh 1991; McKay 1993; Barton 1994; Street 1994).

The approach to literacy that I wish to adopt draws particularly on the work of educationalists such as Auerbach (1995), Benesch (1993; 1996; 1999) and Pennycook (1989; 1997; 1999) in viewing literacy as a social construct and the development of academic literacy as a form of political practice. For example, Auerbach (1995) suggests that instructors' pedagogical approaches and choices of teaching materials both influence and are influenced by the nature of the socioeconomic and political forces that exist beyond the classroom. To deny the political nature of language education, argues Pennycook (1989) can be equated with 'articulating an ideological position in favor of the status quo' (p. 591).

The ideological positioning of EAP courses is an issue that Benesch (1993; 1996; 1999) and Pennycook (1994; 1997; 1999) explore in depth. (For a much fuller treatment of critical approaches to TESOL refer to the special edition of *TESOL Quarterly*, 1999, 33,3 guest edited by Alastair Pennycook). If EAP programs simply aim to

provide students with the academic language skills and content-knowledge required to perform successfully in their chosen disciplines, then such a 'pragmatic' approach, claims Benesch (1993) constitutes 'an accommodationist ideology, an endorsement of traditional academic teaching and of current power relations in academia and in society' (p. 711). Both writers stress the need to adopt an approach to learning that encourages critical questioning not only of all pedagogical approaches and materials but also of the society of which instructors and students form a part.

If literacy in EAP contexts can be theorized as a practice through which social change can occur, how does such a theoretical position relate to the selection of EAP texts? I will address this question firstly by briefly considering how indigenous and non-indigenous perceptions of colonization in Australia have impacted on the language and identity of both colonizers and colonized.

Perceptions of colonization in Australia

Contemporary Australia is still trying to come to grips with its colonial heritage and the ramifications of this colonisation for indigenous and non-indigenous Australians:

Let no one say the past is dead.
The past is all about us and within.
Haunted by tribal memories, I know
This little now, this accidental present
Is not the all of me, whose long making
Is so much of the past
(Noonuccal, 1976: 94).

There are many written accounts in English documenting perceptions and experiences of colonisation in Australia. The ways in which authors both position themselves and are positioned in relation to the events that have taken place is reflected in the specific linguistic choices they make in their writings. The opening chapter of Clark's *A short history of Australia* for instance, exemplifies the author's attitudes towards the colonisers and the colonised very clearly. He describes the indigenous peoples of Australia as possessing a 'primitive Stone Age culture' which, according to Clark, was partially responsible for arresting their progression from barbarism to civilisation (Clark, 1986: 9). (The date quoted here refers to the 6th edition of Clark's *A short history of Australia*. The original text was written in 1963).

Although Clark later revised his views and refers in later years, for example, to the 'wrongs the white people committed against [indigenous] people' (1988: 2) the ideological foundations underpinning the 1986 text characterise the kinds of racist attitudes held by social Darwinists who believed in the 'civilising' effects of European culture and traditions on 'primitive' and inferior societies.

In a study by Christie which analyses the style of English used to describe frontier conflicts between 'whites' and 'blacks', the author comments on the differences between the expressions used to portray the actions of the former compared with those of the latter. According to Christie, the language used to present the actions of the squatters and border police often included terms such as 'incidents, clearing operations, self defense, punitive expeditions or police actions', in contrast to expressions like 'attacks, incursions, atrocities, outrages, crimes, murders, or depredations' which were commonly used to depict the activities of indigenous Australians (1993: 171).

For Christie, such euphemistic and sanitised expressions are unequivocal examples of the use of English as a language of oppression, ensuring the continued degradation of indigenous Australians by their white colonial masters. Moreover, claims Christie (1993: 171) there are no descriptions of border conflicts by indigenous Australians because in the 1800s they were not permitted to provide either written or spoken evidence in court (albeit in translation). This lack of the legal right to self-representation ensured that the silence and invisibility of indigenous Australians involved in such events was complete.

The need for indigenous peoples to 'take action within and against' (McCormick, 1994: 49) the sociocultural conditions imposed by colonisation, to represent themselves and tell their own histories is self-evident; however, the language(s) and textual forms in which these histories might be expressed raise a number of key questions that relate to the selection of EAP course texts.

EAP text selection and indigenous Australian writing in English

What constitutes an 'academic' text? What kinds of criteria should be developed to answer this question? What types of texts are suitable for inclusion in our courses and why? What sorts of texts should be excluded and why? Are newspaper articles and letters appropriate? Is the language of poetry too difficult and too dense, especially for lower level proficiency classes, because of the often quirky, 'non-standardized' linguistic forms that are employed?

In attempts to discuss such questions with other EAP staff a number of years ago there seemed to be a tendency to focus on text type: all our texts had to measure up to some sort of rigid notion of academic writing that was impersonal; they should abound with well-formulated thesis statements and refer to the work of others to support the authors' central propositions. In short, texts selected as suitable readings for our courses were those that were written in the style of academic journal articles and books because students needed to be exposed to texts that would model the kind of 'academic' writing we expected them to reproduce.

In more recent times, discussions of texts seem to have moved in different directions with more emphasis being placed on questions such as: Are we using primary or secondary sources? Are certain texts biased, and if so, why and how? Are we presenting a variety of viewpoints on particular topics? Do our texts contain ideas that are intellectually stimulating and that challenge our assumptions about the world around us? Are we promoting one particular view of the world? Finally, to relate to the theme of colonisation in Australia, are we encouraging our students only to read texts about indigenous Australians by non-indigenous writers by excluding examples of the work of the latter from our reading packs because it may be too difficult to find texts by indigenous writers that conform to our sense of the meaning of the term 'academic'? (It is important to note here that I do not mean to imply that just because a text is written by an indigenous Australian it automatically warrants selection: Its relevance to the course theme; the particular viewpoint it expresses; how it relates to other selected texts; its length and lexical complexity would also be important factors to consider, among others)

According to Davies et al. (1997: 32-34) the traditionally oral nature of Australia's indigenous languages impacts upon the written discourse in English of indigenous Australians in the form of features such as repetition and the use of direct speech. For speakers and writers of standard Australian English (SAE) the prevalence of such features may be interpreted as lacking in linearity and transparency of structure (Davies et al., 1997: 35).

The implications of this perspective are potentially wide reaching. Narogin (1990) for instance, claims that it is precisely the adoption of this kind of attitude by some Australian publishers that has been instrumental in maintaining the silence and invisibility of indigenous Australian authors by preventing them from being published. European editors, he argues, promote the notion of a Western-based literary canon and pressurise indigenous Australian writers into writing in ways that dilute the indigenous nature of their work. Narogin emphasises the importance of realising that choosing to use a particular language or dialect constitutes a form of political action (1990: 92), suggesting that indigenous writers should adopt their own indigenous forms of writing rather than complying with 'Western' literary conventions, (1990: 92 and 153). Likewise the importance of recognizing that excluding the work of indigenous Australian writers from our course reading packs on the grounds that their writing is 'non-academic' constitutes an act of political dominance that cannot be justified.

My discussion so far has focussed on presenting literacy as part of a broader sociopolitical context and exploring the relationships between critical literacy and texts about colonialism in Australia that have been written on and by its indigenous peoples. I have outlined the kinds of questions that have been raised in EAP staff discussions on text selection at my own workplace, arguing that indigenous writing in English should not have to conform to conventions that stem from dominant 'Western' values in order to be published. I then highlight the inherently political nature of text choice for reading materials in EAP courses.

I would now like to provide more detail about the EAP programs in which I have been involved where students have been introduced to different perspectives on colonial and post-colonial Australian society using both indigenous and non-indigenous Australian writers' texts.

Using indigenous and non-indigenous Australian writers' texts about colonial and post-colonial Australian society in the EAP classroom

The EAP context in which I have been working in Australia over the past 13 years has been varied. I first introduced the writings of indigenous Australians such as Sally Morgan (1987) to ESL students in the Technical and Further Education (TAFE) sector as part of a theme-based ESL/EAP course accredited to units 1 and 2 of the Victorian Certificate of Education (VCE) in Australian Studies (The VCE is granted to students in the state of Victoria at the end of their secondary school careers on successful completion of specified work requirements). Study of Morgan's writings (along with authors from a range of cultural backgrounds) occurred in the course module entitled 'Multicultural Australia'. Generally students engaged immediately with the autobiographical nature of Morgan's writing and her personal quest for a clearer sense of her own identity. The students were eager to relate her work to issues of equity for members of different cultural groups when discussing 'multiculturalism' both as policy and socioeconomic practice. (See Bullivant (1995) for a detailed discussion of the relationship between the development of multiculturalism as a policy and ideologies of linguistic and cultural empowerment).

I have used extracts from some of these texts most recently as teaching materials particularly in theme-based university EAP courses for credit at the Centre for Communication Skills and English as a Second Language (CCS & ESL) at the University of Melbourne. These courses were first developed in 1992 and are designed primarily for

undergraduate students from non-English speaking backgrounds to assist them to develop the language and communication skills they require to achieve their full academic potential during their university studies. (Since working on this article I have developed a reading and writing activity based on texts referred to in this paper. Examples of students' writing produced during these activities will be reported on in a future article that will discuss critical pedagogy and the teaching of 'critical thinking').

The texts I refer to in this paper relate particularly to the first of these courses that was developed around themes and topics connected to Australian colonial and post-colonial society. It was felt that such content material would be of interest to students from diverse language backgrounds and disciplines since many would be recent arrivals in the country and eager to discover more about Australia's history, institutions and current affairs.

Students who enrol in these credit subjects are required to read texts relating to the content of the lectures given by relevant faculty lecturers and attend tutorials with ESL/Communication Skills lecturers that focus on developing academic listening, speaking, reading and writing skills based on these content materials. Where the teaching focus is on critical reading students may be asked, for example to compare the kinds of values and opinions of the author of the statement 'As other peoples made the transition from barbarism to civilisation, chance protected the Aborigines from such (changes)' (Clark, 1986: 9), with those of the writer who asserts that:

Governments and institutions need to see and to find ways of working with different knowledges. Part of this is beginning to see European-type knowledge as just one sort of knowledge among many
(Yunupingu, 1994:119).

In-class discussions about such texts have resulted in students exploring the connections between what they are studying in the classroom to the broader social and political issues facing contemporary Australian society. For instance, in recent times students have been keen to find out more about the current movement towards reconciliation between indigenous and non-indigenous Australians and to reflect on the roles they themselves might play in this process. They have been motivated to inquire, for example, about meetings about land rights; one student was keen to write an article for an Indonesian journal on the theory and practice of multiculturalism that included an analysis of the position of indigenous Australians in contemporary Australian society.

Since the early 1990s, when the impetus for this paper first developed, there have been a number of important additions to the list of credit subjects offered by CCS & ESL: the subject 'Language Approaches to Literature' was introduced in 1996, and utilises a variety of written text genres including that of Morgan (1987) in order to explore the ways in which meanings are created through language; more recently credit-bearing discipline-specific subjects in Architecture, Economics and Commerce, Engineering and Information Systems have also been developed. The provision of these courses is directly the result of students' desires to study the content of their chosen disciplines and the development of closer links between CCS & ESL and staff from different faculties. Feedback from both students and faculty staff indicates that these co-teaching approaches are proving to be highly valued.

Concluding comments

In this paper I have explored some of the connections between a view of literacy as a social construct and a form of political practice and the selection of EAP course texts. Taking colonisation in Australia as an example of a course theme for discussion about text selection, I have attempted to highlight the interconnections between reading/writing and questions of language, identity and social transformation.

If debates about the inclusion or exclusion of certain texts in our EAP curricula might usefully be seen as 'a nexus for struggles over difference, identity and politics' (Luke, 1996: 317-318) then, I have argued, it is necessary to expose such struggles if we are to avoid perpetuating the kind of exclusionary practices which could deny writers of 'non-academic' or alternative text types, not only the possibility of representing themselves in their preferred writing styles, but also the means of reaching a readership that is both diverse and numerous. Furthermore, it is precisely by engaging with struggles over difference, identity and politics that we can work towards achieving a 'pluralisation of knowledge' (Pennycook, 1997: 263) that could lead to a greater understanding of the nature of the historical and cultural forces that shape the ways in which we make sense of our worlds, which may enable us to challenge the status quo. As Malcolm and Rochecouste argue in a seminal report about the difficulties experienced by indigenous Australians in engaging with academic discourse forms, 'Cultural inclusiveness in higher education ... means achieving a greater level of self-awareness on the part of the educators' (1998: 71).

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COMMUNICATIVE PRACTICES IN WEB-ENHANCED COLLABORATIVE LEARNING: A VIEW FROM WITHIN

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Technological innovations and proliferation of web-mediated learning and teaching are creating ever new opportunities for conceptualising, designing, facilitating and thereby enacting collaborative learning. By enabling social interactions via an electronic medium unrestrained by space, time and pace, the deployment of web technologies expands and transforms the social interaction space of collaborative learning. This paper explores web-mediated collaborative learning from the social interaction perspective. More specifically, the paper applies a *Communicative Model of Collaborative Learning* (Cecez-Kecmanovic & Webb, 2000a, 2000b) to make sense of students' interactions in an undergraduate management subject taught in a combined face-to-face and web-enhanced mode. By analysing the empirical data from linguistic interactions among students, the paper investigates not only what these interactions *mean* but also what they *produce* in particular learning situations and how they affect knowledge co-creation.

Collaborative learning strategies

Collaborative learning strategies require more interaction and engagement between learners than do traditional methods (Gibbs, 1992; Topping & Ehly, 1998) and as such produce deeper rather than surface learning of concepts, theories, and the co-creation of knowledge. Furthermore, collaborative learning strategies are more successful in developing generic skills valued by employers (Donaldson & Topping, 1996; Gibbs *et al.*, 1994), for example, communication skills, and those skills required to develop and participate in self-managed teams. If students are to graduate as independent, life-long learners with competencies in the cognitive, social, and affective domains, then there is a significant pedagogical advantage in student-centred learning which focuses on experiential learning (Kolb, 1984) and collaborative interchange. However, the process of restructuring learning from teacher-centred to student-centred is critical (Spiller, 1998). Not only do content, process, and assessment require redesign but also students and teachers are repositioned. Web technologies and appropriate strategies offer new possibilities in such reorientation to active learning (Bonk & Dennen, 1999).

The research setting

This study is located within an innovative, multi-mode delivery of a third-year undergraduate management subject. Systematic restructuring of the course aims to improve student learning in three ways: first, deeper learning of management concepts and theories through collaborative teaching and learning strategies; second, better understanding of the value and use of management theory in practice by employing it in collaborative learning projects; third, better development of the generic skills (Falk, 1999) required to work successfully in groups, self-managing teams and organisations by integrating this deeper learning in group projects. Throughout the subject, its design seeks to "find ways of embedding formative thinking into all acts of learning" (Boud, 1999). The project is thereby situated within current educational trends towards innovative forms of teaching for, and learning of, those qualities and skills increasingly required in rapidly changing workplaces. Thus collaborative learning in workshops and web-mediated environments are carefully structured to parallel the various components, complexity and challenges of working in organisations.

The class in this study formed an organisation within which groups of students undertook projects contributing to organisational objectives. This strategy facilitated collaborative learning about organisational behaviour and management, as well as the development of groups towards self-managing teams. To extend and enhance the limited opportunities available during 2 hour face-to-face weekly workshops, 8 electronic bulletin board forums were established for each group and organisational division, as well as a main forum where messages across the whole organisation could be posted. The main forum was also used to support the development of web-related skills, and for posting contributions on different topics from preparatory web-mediated activities, such as on-line quizzes, internet exercises and textbook readings. Whilst annotated contributions to the bulletin boards formed an integral part of subject assessment (directly 10%) and web technologies a medium for engaging more fully in reading and quizzes (10%), the requirement to develop collaborative learning was embedded in most assessment tasks and criteria.

The majority of these students enrolled in the subject were female (72%) and undertaking a compulsory unit in a Bachelor of Applied Science (Food Technology) at a 'new' Australian University. On the other hand, those students electing to take the management subject came from diverse degrees and were mostly male. In the 13 week semester, the 34 students produced over 1000 postings on the bulletin board, set up to enable collaborative learning. Of these messages, 85% were linked by topic in 66 threads with between 4-28 messages in each thread, one indicator of the significant extent of collaborative engagement amongst the cohort. Using NVIVO and Excel software, 738 postings to the main bulletin board were examined and sorted, and 590 were then coded using the conceptual framework which we now discuss below.

A Communicative Model of Collaborative Learning

The conceptual framework governing our empirical research is based on the assumptions that a) collaborative learning is performed and mediated by language, b) collaborative learning is a process of social interaction, and c) acts of communication or *language acts* function as social interaction mechanisms producing collaborative learning and knowledge co-creation processes. The framework is summarised in the form of a *Communicative Model of Collaborative Learning* (CMCL) presented in Table 1 (Cecez-Kecmanovic & Webb, 2000a, 2000b).

CMCL identifies and classifies language acts as constituents of collaborative learning along two dimensions: the *dominant orientation of learners* and the *domain of knowledge*. First, the model identifies orientation to learning (manifested as a wish to know, to interact with others to increase mutual understanding and construct knowledge cooperatively); then orientation to achieving ends (manifested by students' primary motivation to succeed eg. to get a pass or a good mark or to get the best mark in the class); and orientation to self-representation and promotion (manifested by students' attempts to make an impression on others, portraying a particular image of self). Second, the model differentiates between language acts that refer to different domains of knowledge, such as those related to subject matter and any substantive issues (theory, application, problem solving, etc.); linguistic acts addressing norms and rules that regulate the conduct of interactions and interpersonal relations in the collaborative learning process; and linguistic acts addressing personal experiences, desires and feelings by which students express themselves and shape both their individual and collective sense of self and of their learning process.

CMCL thus enables classification of linguistic acts produced in particular learning situations according to the 3x3 scheme (Table 1). Communicative analysis based on this model is concerned with what a specific linguistic act refers to and at the same time how it contributes, what it enables (in the flow of linguistic acts in a conversation) in the construction and maintenance of collaborative learning processes. Although, for instance, a certain linguistic act may be of the same type eg. disputing (assumed or accepted) norms and rules, what it actually produces depends on the student's orientation. A student oriented to learning may dispute a norm seeking mutual understanding with other students and cooperative resolution of the dispute; on the other hand, a student oriented to achieving a good mark may dispute a norm if it does not suit his/her particular goals, seeking to change it without being much concerned about others; a student oriented to self-presentation may dispute a norm for the sake of presenting himself/herself in a particular way, eg. as an important, influential and respected group member. It is important to note that interpretation of a linguistic act is always within a context of the learning situation and the flow of linguistic acts constituting the learning process.

Table 1. Communicative Model of Collaborative Learning (CMCL)

Knowledge domains Dominant orientation to:	SUBJECT MATTER (1)	NORMS AND RULES (2)	PERSONAL EXPERIENCES, DESIRES AND FEELINGS (3)
LEARNING (A)	A1 - Linguistic acts about subject matter raised in order to share views and beliefs, to provide arguments and counter-arguments leading to mutual understanding and knowledge creation	A2 - Linguistic acts that establish norms and rules regarding interaction and collaboration; cooperative assessment of legitimacy, social acceptability and rightness of individual behaviour	A3 - Linguistic acts expressing personal views and feelings about learning process and other learners aimed at sharing experiences and increasing mutual understanding
ACHIEVING ENDS (B)	B1 - Linguistic acts that raise or dispute claims and provide arguments about subject matter, with an intent to frame attention, influence others and achieve goals	B2 - Acts of changing or interpreting norms and rules about the interaction process so as to suit a particular student interest and goals (may be at the expense of others)	B3 - Acts expressing personal experiences in a way that influences other learners and instructors so as to help achieve goals (eg. emphasising personal success)
SELF-REPRESENTATION AND PROMOTION (C)	C1 - Raising or disputing claims and arguments as a performance on a stage that serves personal promotion (often neglecting an ongoing argumentation process)	C2 - Raising or disputing claims about norms/rules or their violation in order to attract attention and establish oneself as a distinguished student (eg. a leader, an authority)	C3 - Linguistic acts expressing personal experiences and feelings that project an impression of importance in a group or of a key role in a situation (eg. self-promotion or domination)

In the following sections, we present findings from using CMCL to analyse the transcripts of the student bulletin board discussions throughout a semester. The discussion is focused on students' communicative practices, the generation of collaborative learning conditions and the productivity of the collaborative learning spaces.

Students' communicative practices

The ways in which students employed linguistic acts are presented in a different format in Table 2 for the purposes of briefly summarising the overall analysis. Of the 590 contributions to the bulletin board that were coded, 76% were directed towards learning about the subject matter, with fewer directed to achieving ends (19%) and even less (5%) with self-representation and promotion. There are notable gender differences in linguistic acts, a feature that is consistent with the considerable body of research literature on gendered communication (see for example, Poynton, 1993). Contributions to collaborative learning were posted more often by female students (79% of their messages) than by males (64% of their messages) whereas males were somewhat more concerned with achieving ends (23%) compared with their female peers (18%) and with self-representation and promotion (13% of males' messages compared with 3% of females' postings).

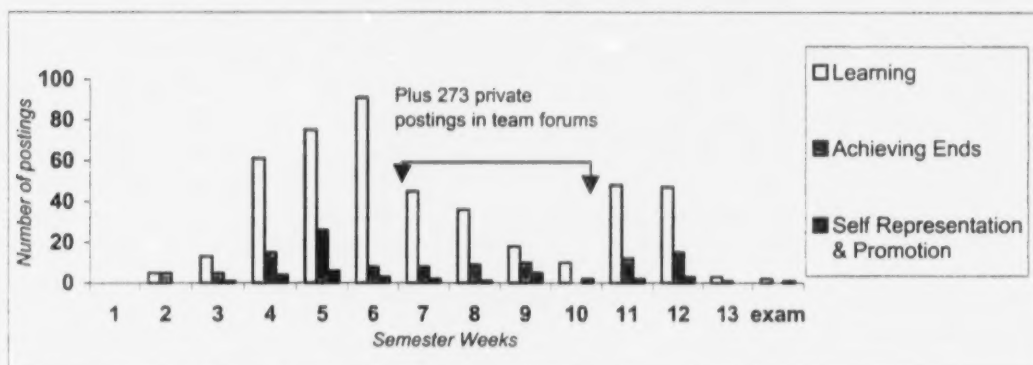
Table 2. Student communicative patterns

Dominant orientation to	CMCL Code	Total coded messages	% of total messages	Female % of total	Male % of total
LEARNING (A)	A1	258	44%	45%	40%
	A2	87	15%	17%	8%
	A3	104	18%	18%	16%
	TOTAL A	449	76%	79%	64%
ACHIEVING ENDS (B)	B1	22	4%	3%	7%
	B2	12	2%	2%	3%
	B3	77	13%	13%	13%
	TOTAL B	111	19%	18%	23%
SELF- REPRESENTATION AND PROMOTION (C)	C1	10	2%	1%	4%
	C2	4	1%	0%	3%
	C3	16	3%	2%	6%
	TOTAL C	30	5%	3%	13%
TOTALS		590	100%	100%	100%

Development of collaborative learning conditions

The generation of a collaborative learning space over the semester is mapped in Figure 1. The number of postings indicates the intensity of interaction and the colour white, grey or black denotes student orientation to learning, achieving ends or self-representation, respectively. Initially (weeks 2-3), while students became familiar with a new technology and a new form of active, student-centred learning, their focus was as much on achieving ends as it was on learning. Detailed analysis of postings show that students first focused on learning by co-operatively assisting each other in their adoption of the unfamiliar web technologies. At this early stage, they were equally concerned with the ways their collaboration would be organised and regulated as they were with how their contributions would be assessed.

Figure 1. Development of collaborative learning space



However, by week 4, their focus was well established on learning, not only with significant increases in the number of postings but also a rapid increase in linguistic acts that established a collaborative discourse on the main bulletin board. In weeks 7-10, most activity took place not in the main forum but in private team forums directed towards their team project presented in weeks 9-10. 273 postings from these private forums were not included in the graph in Figure 1, and are not analysed in this study. In weeks 11-12, the role played by assessment and submission dates partly accounts for the increased numbers of posting on the main bulletin board.

The nature and intensity of postings on the bulletin boards in the course of the semester provide an indication how collaborative learning conditions were generated and maintained. After an initial phase (weeks 2-3), the interaction entered a high intensity phase in weeks 4-10 (with an average 80 postings per week including team forums) during

which collaborative learning conditions were fully established. In the last phase, weeks 11-12, the intensity decreased slightly reflecting the completion of the team projects and the assessment tasks. Such a 'pattern' of the development of the collaborative learning space matches students' needs for collaborative learning throughout subject and can thus be considered satisfactory. However, a different subject design would have produced a different pattern.

Productivity of collaborative learning space

One set of data from the main forum has been selected (Table 3) to demonstrate how students constructed knowledge together about organisational communication. This Prototype thread, comprising 32 messages during weeks 7 - 8, is 'scaffolded' for the purposes of briefly illustrating how the CMCL framework is applied to analyse the flow of messages leading to knowledge creation and what supported and obstructed this flow. Such analysis thus enables an inside view of the productivity of the web-mediated environment. In the table below, the student's posting is placed in the left column and the CMCL coding and interpretive comment in the right column.

Table 3. Portfolio layout thread

Subject: ATTENTION ALL ORGANISATION MEMBERS CONCERNING THE PORTFOLIO LAYOUT	CMCL codes and interpretive comments
Article No. 639: posted by Esther on Sat, Apr. 8, 2000, 04:23	A1
Hi everyone, the following attachment involves our team's proposal for the layouts of the management portfolio. Please open the attachment and take a look at it. We importantly need your feedback by Thursday the 13th of April, 2000. Thank you very much! =) From The Prototype Team.	Informs and invites collaboration for mutual understanding on attached proposal
Article No. 658: posted by Amy on Sun, Apr. 9, 2000, 18:11	B1, B3
Ok here is what I think. For one thing, I am unable to view the "proposed layout" as it is not in a format compatible with any of the software on my computer. Secondly I am curious to know whether all of those people (including me) who have already organised their portfolio and journal in a certain way, if they are meant to go back and totally reformat what they have done up to now. If that is the case then I think that it is totally unrealistic and I myself will not be doing that...	Concerned with how things are to be done for personal success, expresses her own frustration, seeking clarification as well as conditional refusal
Article No. 668: posted by Esther on Sun, Apr. 9, 2000, 21:50	A1, A2
For one thing, if you don't like what we are doing here, address your hostile complaints to the CEO (Lecturer), or to the IR[Industrial Relations] group. As requested by the CEO, the layout/ presentation of the Portfolio has to be similar for everyone. ... as she has been finding it difficult to comprehend the layout of everyone's portfolios... So the purpose of the attachment was that to see if everyone agrees with the layout that our group have already come up with, or if not then any suggestions/ideas on how it show be presented... In any organisation, I'm sure that you'll find that specific documents are presented in a compulsory setup so that they can be easily accessed, and understood. That is all!!	Employs organisational language and concepts from the subject, explains relevance of task and the assumed role of the CEO; emphasises mutual understanding whilst refusing the hostility.
Article No. 672: posted by Michael on Mon, Apr. 10, 2000, 12:33	C2
I think there are a few things we need to do to avoid this problem becoming another source of anguish to all of us. ...I also appreciate that the team who posted the suggested layout are acting on instructions / direction/ suggestions from the CEO and are only trying to achieve their aims and objectives in relation to the workshop exercises so that they will be assessed in a favourable way for the task they have undertaken. It may simply be there has been another break down in the already confused communications system of the group. To clarify this situation there are some questions we need to ask...Due to the CEO being unavailable for comment, it will be necessary for ALL members of the group to discuss this situation and resolve it. Our resolution can then be given to the CEO on her return as being the will of the group. If it eventuates that there develops a standard format for the presentation of the portfolios then the members of the group may have to accept it and comply with that format. Michael	Positions himself as a member of the Industrial Relations team and in opposition to 'management' as represented by the CEO and her 'directives'. Seeks to promote self as spokesperson of wider dissatisfaction assumed to be shared by others
Article No. 754: posted by Esther on Mon, Apr. 10, 2000, 18:58	A1, A2
Hi Michael, My answers to your questions are below each question, just scroll down...	Responds to previous participant, assuming to

...Has the CEO indicated that only the instructed / directed / suggested format is to be accepted and will any diversion be penalised? Well here is the flexible part of the whole thing. Last week as our team showed to the CEO what we have come up with for the layout of the portfolio, the CEO have specifically suggested to our team to conduct the survey in question. This is so that everyone in the organisation can give their own suggestions/views on how to present the portfolio, so that in the end our team can come up with the best possible solution... The layout that our team have posted on the BB is just a suggestion therefore in the sense of the word "Proposal" there is nothing definite about it yet, because we'd like to get some constructive feedback from everyone. Well that is all for now. I hope that our team's answers all make some sense. Thanks for the help. =) The Prototype Team =)	inform and continue collaboration rather than taking up his leadership of dissent. Thereby establishes the proper process and conditions for ongoing collaborative learning about how to get the team's task accomplished in spite of potential barriers
Article No. 766: posted by Jess on Wed, Apr. 12, 2000, 15:33	A2, A3
Why is everyone getting hostile at Esther? she is only trying to do her job (as is everyone else!). I think that the proposals that have been suggested are helping to clarify what is expected in the management portfolio, although many of us have been trying to keep up to date with the self-tests etc, many of us did not know how to present them, so thanks a lot Esther (and team) for helping us all out. JESS.	Appreciates and clarifies the organisational role of a colleague and her team and expresses gratitude
Article No. 676: posted by Larissa on Mon, Apr. 10, 2000, 14:32	A3
I just want to comment about the fact that we are all part of one organisation. I think the purpose of this is that so that we can all work together, help each other out with whatever job is given to us. But instead, it feels like each divisions are competing with each other?? How can we manage to build a strong organisation when everyone is working against each other? I think that we all should support each other. I hope i got my message across for those people who cares.	Reflects on experience of student competition and demonstrates deep learning of the need for co-operation in an organisation to achieve its objectives.
Article No. 744: posted by Jane on Mon, Apr. 10, 2000, 17:40	A3
Thanks Larissa for that. I know what you mean. I think people are still in the mode of other subjects which is really hard habit to kick when you are used to that sort of atmosphere.	Establishes mutual understanding regarding learning experience and generalises knowledge about collaboration from this and other subjects

By applying the CMCL, it is possible to see that some students (Esther, Jess, Larissa and Jane) are orientated principally to learning (A). Amy and Michael are more orientated to achieving ends (B) and self-representation (C) respectively. The focus of student contributions vary from concern with the subject matter (Esther as team leader undertaking a task), to the application of norms and rules (Jess's focus on Esther's organisational role, Michael's focus on attracting the attention of ALL the organisational members to express their 'will' to the CEO), to personal experiences, desires and feelings (Amy's frustration with how to present her Portfolio successfully without additional work, Larissa's and Jane's reflections on the Portfolio communication thread to make meaning from their experiences of the process).

The exchange of messages demonstrates how some communications create knowledge (Esther's request for feedback and her responses to Amy's and Michael's challenges) whilst others are less concerned with collaboration about learning and more concerned with taking up leadership of a different agenda (Michael's dissatisfaction with the course and its evolving conditions). Most importantly, the collaboration draws out explanations of how most organisations use standard document layouts (Esther), how roles are to be differentiated from the person doing a job (Jess) and how an organisation relies on cooperation between divisions to meet its objectives (Larissa). This management subject matter, essential to student learning is co-created throughout the discussion as students variously raise claims, respond to questions and requests for clarification, seek to influence and challenge knowledge, and seek to resolve, in this case, the specific issue of their Portfolio layout.

Methodological and pedagogical implications

This study enables us first, to make sense of student messages and the processes of knowledge co-creation in web-mediated collaborative learning; second, to raise pedagogical implications in the deployment of web-mediated technologies for collaborative learning; third, to assess the value of the CMCL model itself as an investigative tool; and fourth, to identify emerging research questions in this newly expanding web-enhanced teaching and learning domain.

By analysing first linguistic acts in individual messages and then the flows of linguistic acts in the forum (based on CMCL) we were able to interpret the meaning of student postings and understand the way they interacted and learnt collaboratively. Furthermore, we were able to understand how students use linguistic acts to express their beliefs and experiences, to govern the interaction process and achieve cooperative meaning-making, knowledge sharing and co-creation.

Such an analysis suggests a number of pedagogical implications. One is the question of how the 'ideal learning conditions' are generated, shaped and maintained (Cecez-Kecmanovic & Webb, 2000a). Identification of the different types of orientations of learners enables a staff facilitator to monitor students' linguistic acts so as to encourage or intervene in interactions as appropriate. By coaching and providing exemplars, A level contributions in all 3 domains (what students learn; how they relate to each other and regulate their interaction processes; and how they feel about their experiences) may be encouraged to hasten the development process towards ideal learning conditions. In this study, 57 messages on the main bulletin board from the staff facilitator were identified as undertaking this contribution to shaping and maintaining collaborative discourse. It is also possible for the staff facilitator to identify and intervene where dysfunctional B and C attitudes (such as achieving one's goal by disregarding others' interests or at the expense of others, or promoting oneself by instrumentalising others) may frustrate or inhibit the collaborative learning of other students. Such interventions recursively shape and maintain collaborative learning conditions.

This study suggests that CMCL provides a useful tool for investigating collaborative learning processes enabled by web-enhanced activities. By applying this model to bulletin board exchanges, it was possible to examine these collaborative learning processes from within the spaces where linguistic acts were conducted by and between students themselves, a view from within. It was also possible, from coding the range and complexity of the students' linguistic acts into the CMCL as initially conceptualised, to identify where some further developments to the model can be made.

Future research methodologies may include developing methods using CMCL with NVIVO to investigate the flow of knowledge creation in web-mediated learning environments. Such a method would enable comparison to be made of the relative applicability of different learning strategies and web-mediated technologies.

The communicative analysis of student electronic postings based on CMCL, as this paper has shown, demonstrates how we cannot assume that by providing technologically-advanced environments such as web-enhanced discussion spaces, successful collaborative learning will necessarily take place. It highlights the need for careful shaping of collaborative learning conditions, attentive to the communicative needs of learners, and sensitive to subtle forms of knowledge co-creation. There are clearly challenging pedagogical issues for designers of these new environments when a divisional student leader, asked to evaluate the active learning of his team members as they approached the reflective journal component of the course commented: "They don't yet realise just how much they are learning this way".

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THE ROLE OF EMOTION IN SITUATED LEARNING AND COMMUNITIES OF PRACTICE

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Introduction

The study of working knowledge has arguably long ignored the impact of emotion on both individual and organizational knowing. In this paper I will suggest that whilst Situated Learning and Community of Practice theories have greatly enhanced our understanding of learning in organizations, the absence of emotion in these theories is a major omission which would add significantly to these ideas. I will argue that the Taylorist legacy of rationality, which still pervades much management thought, also still underpins many of the knowledge and learning theories, despite a growing body of evidence indicating that learning and emotion are inextricably linked in organizational life.

As organizational members, we learn to collaborate, influence, negotiate, organise, motivate, and achieve results through our interaction with others, all of which can be highly charged with emotion. We observe others, emulate colleagues whose success we admire, avoid the behaviours of those who appear to miss the mark, and become socialised into knowing what behaviours and norms are recognised and rewarded in our environment. As regimes at the top change, so too do our behaviours, as we adopt the chameleon-like qualities required for survival in our organizations. Much of this learning takes place tacitly within our Communities of Practice, yet arguably none of this is without its demands on our emotions.

The paper will draw on Wenger's own case study of claims processors (1998) to argue that emotion is a crucial and missing factor in our understanding of working knowledge, and specifically our understanding of how Communities of Practice construct shared meaning and develop knowledge.

Situated learning theory and the complementary concept of Communities of Practice (Lave and Wenger, 1991; Wenger, 1998; Brown and Duguid, 1991; Fox, 1997) have been growing in popularity amongst learning and knowledge theorists in recent years. These theorists have argued for a social theory of learning viewed as a "situated activity" in which newcomers learn from old timers and gradually move from the periphery to become full participants in a socio-cultural practice. For Wenger (1998) the components of this theory include power, meaning, practice, community, and identity. Even in his focus on identity, however, Wenger's commentary omits the affective dimension. This paper will argue that the absence of explicit reference to emotion in the theory of situated learning is a major oversight.

Brown and Duguid conclude that for the Situated Learning theorist, learning is not about the transfer of knowledge from the "head of someone who knows to the head of someone who does not" (Brown and Duguid, op. cit. p174) but instead reflects "a view of knowledge as social construction, putting knowledge back into the contexts in which it has meaning." Thus, learning involves becoming an insider, and learners learn to function in a community and to become "enculturated" (Brown and Duguid, op. cit. p.175).

Emotion in Situated Learning

The very existence of emotions in organizations has, until recently, commonly been either denied or ignored by organization theorists. Even with the rise of humanist thought, emotions have continued to be seen as belonging to the private domain, to be harnessed by managers for motivational or performance reasons, but having little bearing on other aspects of organizational life such as learning, knowing and innovating. This is, however, beginning to change. In parallel with the rise in popularity of situated learning theory has been a growing interest in the underacknowledged, but crucial role played by *emotion* in organizations. (Fineman, 1993, 1995; Newton, 1995; Wharton and Erickson, 1993; Ashforth and Humphrey, 1993; Huy, 1999; Hosking and Fineman, 1990).

Fineman has stated that "cognitions and emotions intertwine" (1993, p. 16), an argument that has also been made by Huy (1999) who posits that emotion, cognition and strategic action in organizations are inextricably connected. The suggestion that emotions play a large part in binding communities, and in the production of shared meaning is highly significant for researchers into Communities of Practice:

"Expression of feelings also serves a communicative role by developing a sense of *community*" (Putnam and Mumby, 1993, p. 51).

This is echoed by Hearn who argues that there is "no reason why emotions should be seen as less social than any other phenomena" (1993, p. 152).

Although the subject of emotion is entirely missing from Lave and Wenger's early study (1991), Wenger does acknowledge in his later book (1998) that participation in social communities "is a complex process that combines doing, talking, feeling, and belonging. It involves our whole person, including our bodies, minds, emotions, and social relations" (1998, p. 56). He adds:

The whole process is as generative as it is constraining...It involves our impulses and emotions as much as it controls them (1998, p. 82).

However, the importance of emotion is never developed further by Wenger, and surprisingly has received little attention from subsequent situated learning scholars. Marsick and Watkins (1997) note this omission in their own research into informal and incidental learning, acknowledging in their conclusions:

Finally, our model - as is true for most other models of informal and incidental learning - does not attend to the key role of emotions (1997, p. 308).

Only Fuhrer (1993) gives more than passing thought to the impact of emotion in situated learning. In his situated learning study of newcomers in "coercive" settings, he identifies *social embarrassment* and *social anxiety* as crucial catalysts in the learning process and concludes by arguing for an approach to interpreting situated learning which includes the emotional dimension:

And in looking at both the cognitive and the environment dimension in the study of situated learning a third dimension comes into the focus of the researcher: the emotional dimension (p. 186)

Learning emotional display and control in the workplace

Whereas Fuhrer focuses predominantly, on impression management and self-consciousness potentially leading to social embarrassment and anxiety, I will argue in this paper that emotions play a much wider role in situated learning. The level to which we openly exhibit emotion in our organisations, for example, is clearly *situatedly* determined. We learn, for example, *how much* emotion it is acceptable to express in our organizations, and know from our own experience and that of others *which* emotions it is acceptable to express in our organizational life, and when it is appropriate to do so. Newcomers to communities of practice learn over time to "know" which emotions are accepted and acceptable and which are not by observing the "old-timers". Patterns of emotional expression are often set by organizational leaders (Schein, 1985), sometimes explicitly through missions and visions, but often as manifested through their own behaviours.

Developing these abilities or sensitivities, however, is a constant challenge. The workplace is never emotion-free, and the new employee has to learn quickly "to comply with the emotional codes (and avoid the discomfort of embarrassment or censure...)" (Fineman, 1995, p. 128). This idea has recently been popularised by Goleman (1996) who has persuaded many managers that they need "emotional intelligence" to survive in their organisations. Paradoxically, however, in learning to hide certain feelings and exhibit others, the employee may, through this very act, be generating additional feelings of stress (Fineman, 1995).

Much research group life supports the view that group life is a highly emotional experience. Swogger (1993) found that group members were constantly talking about their emotions, and in particular "feelings of satisfaction and fulfillment and the personal meaning the group had for them" (1993, p.100)

Coopey (1998) has introduced the emotional dimension of the relationship between power and learning, arguing that the learning which takes place in the workplace may be suppressed by anxiety, and other emotions associated with revelation and exposure. Thus, he says, when learning occurs in the workplace: "accounts will be censored and sanitized" (p.375) as individuals struggle to maintain their positions and privileges in relation to others. This observation touches on the question of trust, a construct which is rarely emotion-free (Jackall, 1988). In Situated Learning Theory, by contrast, those at the periphery are portrayed by Lave and Wenger as emotionless seekers after the knowledge of the old-timers. Rivalries and envy are erased from their commentaries on these Communities of Practice, and the rhetoric becomes one of "truth-seeking" (Obholzer, 1994).

A number of explanations for the omission of emotion in Situated Learning Theory can be posited. The first derives from Hirschhorn (1993), who suggests a psychoanalytic interpretation that "the ideology of

collegiality functions as a social defense to denude group life of its passions" (p. 83). A second is posited by Fuhrer (op. cit., p. 186):

The view that individual's actions are exclusively driven by mental representations, is deeply rooted in the Western human sciences as the correct model of the rational actor.

Fineman suggests, however, that this cognitive approach overlooks some important aspects of the learning process. "Unwanted" emotions, for example, can often interfere with learning through anxieties, fears, and stress encountered in the process. Emotions, he suggests, are an inevitable part of learning since "thoughts are imbued with emotions and emotions with thoughts" (1997, p. 16)

Communities of Practice, feeling rules and the emotional aspects of the socialisation process

One of the prime methods of learning highlighted by Lave and Wenger is that of the socialisation of the newcomer. Their analysis concerns the appropriation of knowledge in the situated context, yet they overlook the equally important understanding of "feeling rules" (Hochschild, 1983). Rafaeli and Sutton (1987) have argued for more attention to be given to this important tacit knowledge. They illustrate this argument through a case study of a community of surgical nurses which found that members "were expected to present an emotionally flat demeanor in the operating room, to be warm when talking with patients and their families, and to encourage one another to express "true feelings" such as rage and disgust during breaks and informal meetings with other nurses." (1987, p.23). Clearly none of these expectations were covered by formal learning processes or by work based manuals. Yet, it was very apparent that members of this community of practice quickly came to understand these norms.

There has been much debate about the deliberate manipulation of *behaviours* in organizations through formal corporate change programmes. (Wilmott, 1993; Anthony, 1994; Ogbonna and Wilkinson, 1990; Legge, 1995) However, less explicitly acknowledged or understood, and a factor missing from situated learning theory is the way that newcomers learn about the *emotional displays* required by their Communities of Practice.

Here Bandura's (1977) social learning theory is useful in understanding the role of feeling rules in the informal organization. Bandura's research found role models telling stories and demonstrating to newcomers through their actions the norms of emotional expression. This role-modeling can be seen to directly parallel some of the behaviours of Lave and Wenger's "old-timers" in Communities of Practice.

The importance of reflexivity in learning about emotions is demonstrated by Rosenberg (1990), who points to a "broader system of emotion logic that people develop in the course of socialisation. This emotion logic is learned socially and shared widely" (1990, p. 6). Like Hochschild (1983), Rosenberg sees emotional display as a purposive human activity located in the realm of dramaturgy or impression management (Goffman, 1959). He adds that "learning to be a successful emotional actor is no easy task." As well as appropriate facial expression, he points to costume and linguistic devices which are learned in a situated context over time, and combine with other props such as clothes "as a means of producing emotional impressions on the minds of the audience" (p. 10).

Emotional display in Wenger's (1998) Claims Processors

Wenger (1998) uses his ethnographic account of claims processors in Alinsu (in two "vignettes" pp. 18-38) to describe how Communities of Practice produce meaning, community, learning, identity and belonging. Throughout, his accounts are laden with emotions to which, as discussed above, he pays little attention. The following is an illustrative selection.

Social anxiety and embarrassment

Fuhrer has suggested that newcomers will attempt to minimise their social anxiety and embarrassment by trying to blend into the background by taking steps to "conceal his or her identity and to avoid or lessen negative impressions or to enhance positive impressions". (op. cit. p. 199) In the vignette, Ariel, a relative newcomer, illustrates her desire to blend into her Community of Practice by dressing appropriately:

She makes up, but discreetly, and dresses cleanly but not aggressively (p.18)

Even in the process of making this decision it is clear that the anticipation of emotions (Rosenberg, 1990) have played a part in her choice, as she imagines the feelings of humiliation or embarrassment which would follow being inappropriately dressed.

Shame and humiliation

Associated with feelings of social embarrassment are those associated with shame and humiliation, both emotions that also involve the perceptions of others. Finding that she has made mistakes the previous day, now appearing in her in-tray as "voids", Ariel exclaims to herself:

She hates voids; they are frustrating and humiliating (p. 20)

Again Ariel appears to anticipate here the possible reactions of others on hearing of her mistakes. Her emotions are mixed. She is both angry with herself, irritated by the system, and surprised at having made the mistakes.

Relief

Ariel's anxiety about social embarrassment turns to relief soon after discovering the voids, as she shares her feelings of frustration firstly with Maureen, the back-up trainer and an old-timer from whom she "gets some comforting grumbling about people in the quality review unit" (p. 21) and then with her supervisor, another old-timer who "shakes her head in solidarity" (p. 21). As Ariel starts to feel the blame attached to her mistakes dissipating, her emotions of humiliation become those of comfort and relief, thus enabling her once again to concentrate on the work she has ahead of her. Situated learning is taking place, and henceforth Ariel might more accurately anticipate the responses of others to her voids, thus possibly lessening her embarrassment in future, but also enabling her to empathize with others experiencing similar feelings of rejection in the future.

Anger

Learning to deal with interpersonal conflict is a common aspect of learning to operate successfully in a Community of Practice. In a customer-facing role such as that held by the claims processors, learning how to deal with difficult customers is clearly more easily learned through situated experience than in a classroom. On the morning described in the vignette, Ariel has one such encounter as a direct result of following the correct procedures of her job which have required her to withhold some information from a customer in order to protect the privacy of this customer's ex-husband:

After a long struggle, Ariel put the person on hold, just to take a breath. She was so angry, her body was shaking. p. 21)

Here Wenger describes some of the physiological symptoms often associated with anger. Ariel knows that she is expected to control this anger in her work, hence the need for distancing herself from the customer and giving herself time to achieve composure. It is very likely that in observing the behaviours of old-timers she sees that their ability to control emotions of anger are much more developed than hers, and in taking breath she is seeking to develop this control herself.

Embarrassment

Wenger describes the embarrassment experienced by the claims processors in dealing with customers whose claims have been denied, particularly as they are not privy to the rationale behind the decision-making process on which claims calculations were based.

Not only were customers usually upset at receiving benefits in a seemingly random fashion, but the processors felt ill-equipped to explain how benefits were calculated:

It's embarrassing when you call and you say, "Well, I don't know how, but that's how much money you got. Sorry." I mean it's embarrassing not to have the information. (p. 37)

In this extract, the embarrassment of the claims processors is caused by the "upset" feelings of the customers. Processors must not only learn how to diffuse the emotions of the customers, but also how to deal with their own embarrassment, particularly as they have no power to prevent a recurrence of the situation.

Boredom

Arguably a counter-productive emotion as it provokes a desire to be elsewhere, boredom is frequently experienced amongst the claims processors. The result is usually an interruption of work:

Ariel is bored and she wants to stand up, so she looks over the partition.

Understanding the disruptive and counter-productive nature of emotions such as boredom is important in our understanding of how situated learning can be inadvertently or deliberately obstructed. Boredom is often a shared emotion, and can be jointly constructed or exaggerated through discussion, evidenced in Alinsu during work breaks.

Fear and anxiety

Fear of failure, which in turn could lead to humiliation is a recurring emotion for Ariel. Indeed this emotion might arguably be seen as constructive to the extent that it encourages her to check her work, but counter-productive where it encourages her to apply procedures even to the detriment of her organization. The two examples below illustrate this.

But she quickly checks in the provider's file that the lab where the tests were performed does not have a similar contract. You will get in trouble for splitting claims unnecessarily. (p. 23)

She uses a calculation sheet to figure out what the deduction is...choosing the larger amount of the two. It has occurred to her that it would be more advantageous for Alinsu to take the smaller one, but the procedure says to take the larger one. (p. 23)

In this community of practice it is acceptable for the claims processors to share their fears, as evidenced below:

Sandra is worried about her quality, which has been in the eighties lately. It's supposed to be above 95%.

In her mail bin she has found a response to an inquiry she had sent to technical. "This guy's going to yell at me (p.30).

The second example resulted in immediate reassurances from a more experienced colleague, and advice about how to pacify the customer, with a view to reducing Ariel's anxieties.

Frustration and resignation

The system which drives the claims processors often interrupts and disrupts their work flow, as they have to log out of their ongoing work to deal with telephone enquiries, thus losing valuable time. Interruptions such as this commonly result in frustration:

This stupid system, you have to lose all your work every time you are interrupted, and that's pretty often(p. 24).

"That guy, he just wouldn't let go," Ariel complains to Annette. "I know," Annette replies, "as if we had nothing better to do."

Here we see an example of shared emotional experience shaping the shared meaning and understanding of the job. Wherever possible, the operators learn to accomplish a number of tasks simultaneously. Their annoyance at being interrupted is also related to their fear of failure if they do not achieve the targets set for them, or if their work is found to be deficient.

Pride

As Ariel's performance improves she begins to experience a sense of pleasure and achievement:

Today is going well, not like yesterday (p. 27).

As she achieves her target, she feels the need to share this sense of pride with her colleagues:
" "I already made production," Ariel says triumphantly".

The sharing of pride is likely to be a learned response to this positive situation, and one which is encouraged by the old-timers who (as illustrated earlier) are demonstrably keen to reduce negative and enhance positive emotions in this community.

Hurt and indignation

When their supervisor warns the claims processors that any long calls will be monitored, as the management suspect that some of them may be giving the "toll-free 800 number to their acquaintances" there is a shared sense of hurt at being under suspicion.

Harriet senses the tension that her remark has brought to the meeting...there is some grumbling a few defensive remarks. (p. 25)

In this example, the trust established in the community of practice is threatened, and the motivation and loyalty of the claims processors is being put to the test as a result of their hurt.

By lunch-time this hurt has turned into shared indignation:

And now they are going to monitor long calls! Everyone knows that there are business calls that are long. Beliza reminds everyone of that 45-minute phone call that drove her crazy. Surely "they" will recognise that this is unfair. (p. 29)

As a result of a single statement of managerial intent we now see a major change in the feelings in the room. Instead of a shared focus on results, the focus is now on the unfairness of the management's attitude. Emotions run high as the group shares its indignation and starts to question the nature of their relationship with their managers. This illustrates the importance in situated learning of newcomers making sense of power relationships in Communities of Practice, and learning to distinguish between the rhetorics and realities of the workplace. Newcomers quickly learn when they are emotionally vulnerable; and when mistrust is displayed toward them, they feel hurt, and in the longer term cynicism and resignation, arguably emotions often used as a defense against disappointment.

From the few pages of Wenger's narrative I have drawn out a range of conflicting emotions shared by Ariel and her colleagues many of which are contributing to the situated learning in the community. Some of these emotions (fear of failure, embarrassment at receiving "voids" etc., pride, comfort) are clearly acting as controls to compel the members to work towards the company's productivity goals. Others, such as anger, frustration, hurt, and boredom may be counterproductive in terms of corporate measures, yet are seen to be contributing equally strongly to learning about feeling rules, behavioural norms, acceptable emotional displays, and issues of power control, identity and meaning. Both sets of emotions are arguably equally important for newcomers learning how to survive in this community of practice.

A research agenda for emotion in Situated Learning and Communities of Practice

The presence of emotion in the community of practice of the claims processors has been evidenced in the section above. The significance of these emotions for situated learning is still to be explored, however, and a number of important questions arise which might lead to a research agenda for emotion in situated learning.

To what extent is the high level of emotional support evident in Alinsu also found in other Communities of Practice and how does this emotional support impact on situated learning in these communities?

In the Alinsu case there are many examples of colleagues, particularly old-timers, offering emotional support to the newcomers. The success of this community appears to be based to a large extent on this high level of emotional support, as well as on the emotional closeness of the members, which is reinforced by numerous celebratory social events, and the sharing of personal issues which break up the work routines and add to the solidarity of the experience.

A number of questions emerge which might be addressed by further research. For example: how might this emotional closeness obstruct the management of change if change were imposed from outside the community in the same way that the monitoring of telephone calls was thrust upon the community? What are the implications of the changes in the membership of the Community of Practice, for example, if old timers were replaced by managers from outside the Community of Practice as frequently happens in organizations undergoing change? And how might such a move impact on the situated learning of the community and the emotional support offered to newcomers to this community?

In Alinsu, as has been highlighted above, it is acceptable to share a great many emotions, from fear of failure and embarrassment at having made mistakes; anger and frustration caused by awkward customers or inflexible systems; hurt at not being trusted by the management, to "triumph" at achieving targets. In addition, numerous personal emotions were being shared in the vignette by the members of the community. This level of emotional intimacy is generally supportive of their situated learning, but can equally be seen to quickly reduce their motivation if the group becomes angry or upset.

Research into Communities of Practice might focus on how the sharing of emotions in a Community of Practice affects the learning that takes place within it. It might be significant here that the claims processors are an all-female community. The implications of any differences between single gender and mixed gender Communities of Practice are important questions to be pursued in developing our understanding of learning as participation.

The implications of social learning theory for an understanding of situated learning theory.

Even from this brief account we see "learning as participation" taking place, not only in relation to processes which the claims processors are expected to follow, but also in relation to the creation of shared meaning, and the social construction and expression of emotion. In view of the close interconnection between social learning theory and situated learning theory, further research into the appropriation of "feeling rules" within Communities of Practice, and the impact of these on the way that learning as participation takes place in Communities of Practice is proposed.

The relationship between cognition and emotion

As discussed earlier, Fineman (1997) has suggested that cognition and emotion in organization learning are often falsely separated. The case study above supports his thesis that the separation of the two conceptions is an artificial distinction. The claims processors themselves make no such distinction between their cognitive and affective responses to the problems and tasks that face them throughout their day. Their conversations move quickly from issues of knowing to issues of feeling, often making no distinction between the two. Further research into this apparently artificial separation between cognition and emotion in learning would undoubtedly enhance our understanding of situated learning.

The impact of feelings of loss produced by organizational change on Communities of Practice?

The vignette chosen to illustrate the presence and impact of emotions in Communities of Practice has served its purpose well. However, this community appears to be relatively stable. Changes are introduced incrementally without disturbing the status quo or relationships in the community. In many organizations today, by contrast, extensive structural changes are undoubtedly having severe consequences for Communities of Practice. As their leadership, membership, technologies, processes and success criteria are radically changed, the repercussions of such changes and the impact of these for situated learning are potentially very significant. Inevitably these changes carry with them a range of potentially damaging and obstructive emotions, both of an individual nature but more importantly for this study of a collective nature. Emotions such as loss, grief and hurt in the face of such changes threaten to weaken the organization considerably if not understood.

Further organizational research is therefore urgently needed to explore the impact of such changes on existing Communities of Practice, the emotions associated with the imposition of these changes, and the implications of these for organizational learning.

Conclusions

The aim of this paper was to explore and challenge the lack of attention to emotions within Community of Practice and Situated Learning theory, and to ask whether there is evidence that attention to the affective elements in situated learning could add to our understanding of Situated Learning Theory, and redress the imbalance identified in the theory proposed by Lave and Wenger.

The paper has demonstrated, using Wenger's own account of one Community of Practice, that emotions are a very important element of situated learning and can influence a great deal the cognitions of the members of a Communities of Practice. That the members do not distinguish between the cognitive and affective elements of their practice and learning is significant and calls into question why most existing organization learning

theorists persist in doing this despite the compelling calls for attention to the affective element in organizational learning.

Our understanding of the importance of Communities of Practice in fostering situated learning is still very limited. The rapid changes taking place in organizations today will undoubtedly change the nature and composition of Communities of Practice in organizations and indeed lead to new virtual communities, which as Fineman (1997) has pointed out, will need to learn creative ways to share meaning and identity through electronic communication. It is clear, however, that emotions will not be eradicated from these new organization forms, and an understanding of the impact of emotions will become increasingly salient in understanding learning in the workplace and the way in which Communities of Practice can both support and detract from organization performance. As we saw from the study of claims processors, shared constructions and shared articulations of emotions were highly influential in determining not just the level of learning in the Communities of Practice, but also exactly what the newcomers did learn and the extent to which this was supportive of the organisation's wider goals.

The current research focus on organization learning, knowing, and knowledge management is considered vital for our understanding of current and future forms of organization. However, I have argued that an understanding of situated learning is incomplete without attention to the important element of emotion.

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Introduction

Within industrialized societies, which have traditionally focused on formal education, there has increasingly been an emphasis on learning in working life, often expressed as life-long learning. At the same time as there is a general need for learning, there is also a requirement for more learning to occur in close relation to work.

A number of new forces, for example, changes related to the nature of work (demographic, technological and global) are impacting on workplaces. The nature of workplace change will necessitate the training and re-education of much of the workforce in the next decade. The curriculum of this decade must provide students with the tools to function in a truly global economy – in all academic disciplines. It must also be adjusted to reflect the transition of workers to knowledge-based workers. Approaches to competency-based training, which facilitate learning in an environment of rapid change and complexity therefore becomes paramount, because of the need to not only acquire new skills and to update old ones, but to understand the impact of different conceptions of competence on learning.

In Australia and in some overseas countries, for example, the United Kingdom, competency-based training, as a crucial part of national training reform agendas, has been implemented. Both systems appear to have been based on the behaviouristic approach to competence, with little thought given to other, more holistic approaches. Although research attempts are being made to explore more holistic conceptions of competence (e.g. Hager, 1994; Gerber & Velde, 1996; Velde, 1997), these appear in the main not to be applied to actual practice.

The competency debate

Origins of competency-based training models

The ideal of competency-based training and assessment appears to have originated in performance-based teacher education in America in the 1960s (Hyland, 1995). Hobart & Harris (cited in Harris et al, 1995) played a leading role in the early development of such approaches in Australia, during the early 1980s. Subsequently, the Australian National Training Framework was implemented to increase Australia's competitiveness in the marketplace. This Framework was shaped and driven by a series of major reports (Deveson, 1990; Finn, 1991; Carmichael, 1992) and two earlier papers (*Skills for Australia*, Dawkins & Holdings, 1987; *Improving Australia's Training System*, Dawkins, 1989). The Australian Government White Paper on employment and growth, *Working Nation* (Keating, 1994), extended and strengthened the impetus of the National Training Framework by highlighting the importance of skills and innovation as a key to Australia's future, both nationally and internationally.

Reform in Australia is now settling in two broad directions. The first is a fundamental reform of the Australian System for Apprenticeships and Traineeships, now entitled the New Apprenticeship Scheme, which was introduced to facilitate high quality training (Kemp, 1996). The second is the transformation of the upper secondary school so that it delivers education courses which are based upon national industry competency standards, involve workplace learning and are linked by way of credit transfer or full certification to post-school TAFE, apprenticeship and traineeship pathways (Sweet, 1997).

Thus, competency-based training has arisen to a significant degree, from economic and social forces within society. Educational decisions which have been guided rather more by economic forces than educational ones (referred to as 'economic rationalism') have led to reconstruction of the workplace.

Current understanding of competence

Competency-based training models have been adopted and practiced widely throughout the United Kingdom, Europe, Asia, United States and New Zealand, although such models differ between countries and also the degree to which they are practiced. However, Australia and the United Kingdom possess many similarities both in the method of implementation and the behaviouristic stance adopted towards competency-based training.

Much debate about competency-based training has occurred in both the Australian and overseas literature. For example, Winning (1993) writes that competency-based training using a behaviouristic approach, is often the focus of critics who suggest that it is generally narrow in focus with emphasis on specific, predefined skills. Thomson (1990, p. 179), too, raises the concern of narrowness: 'There may be a danger in narrowing the training to teaching/assessing technical competencies only. Other skills such as communications, group techniques, and problem-solving are important workplace skills'.

Stewart & Hamlin (1995) criticize 'functionalism' (which they explain is based on behaviourism), because of its limited and rigid focus on the task functions of the job, to the exclusion of the worker. Hyland (1995, p. 50) argues that such an approach is 'utterly inappropriate for programmes of preparation and development in teaching and other professional spheres ...'.

Similarly, Jones & Moore (1995, p. 90) believe that the behaviouristic approach to competence is inadequate in its representation of work and social practices, that is:

The competency method, by reducing the social practices of work to itemized lists of the behaviours ... simplifies both the nature of the organisations and the nature of the competency that people employ within them and their relationship with other spheres of social life.

Demystification of competence: The move towards a holistic perspective

Although, traditionally, competence has been perceived in terms of individual attributes or a discrete set of tasks to be performed (Dall'Alba & Sandberg, 1996), there remains considerable confusion as to what competence actually is, i.e. whether it is a personal attribute, an act or an outcome of behaviour (Ashworth & Saxton, 1991). The concern for competence has been expressed as a need for a more holistic concept.

Gonczi (1994, p. 28) distinguishes between three basic conceptions of the nature of competence: the behaviourist, the generic and the integrated.

... competence [the behaviouristic view] is conceived of in terms of the discrete behaviours associated with the completion of atomized tasks ... This approach is not concerned with the connections between the tasks and ignores the possibility that the coming together of tasks could lead to their transformation. (The whole is not greater than the sum of the parts). Evidence for the possession of the competency ... is based on direct observation of the performance.

This way of thinking about competence which treats it as an entity in itself has been common both among researchers and practitioners. Stewart & Hamlin (1992) comment that where the competency-based training model fails is in the limited breadth of analysis, and the too detailed depth of analysis, for example, in the use of prescribed checklists to assess particular concrete skills. Gonczi (1994) adds that clearly this approach is inappropriate for both conceptualizing professional work, and expressed serious doubts about its relevance to work at any level. Gonczi's (1994, p. 29) second approach can be termed 'generic'.

... Such an approach concentrates on the underlying attributes, e.g. knowledge or critical thinking capacity, which provide the basis for transferable or more specific attributes ... In this model, competencies are thought of as general attributes, ignoring the context in which they might be applied.

Major criticisms of the 'generic' approach include: lack of evidence that such 'generic' competencies exist; doubts about the viability of 'transferability'; the decontextualising of competence; and its abstraction from concrete situations in which skills are actually performed (Gonczi, 1994). For example, asking students to undertake problem-solving tasks; which might be more effectively performed in a workplace setting.

However, some more recent attempts have been made to combine the two approaches to create more integrated descriptions in the form of combinations of knowledge, skills and attitudes (Tovey, 1993). Hager (1994, p. 10) describes an integrated approach to competency-based training and assessment thus:

... competence is conceptualized in terms of knowledge, abilities, skills and attitudes displayed in the context of a carefully chosen set of realistic professional tasks (intentional actions) which are an appropriate level of generality.

Gonczi et al (1990) and Gonczi (1994) continue to conceive competence from an individual-oriented approach, which constitutes knowledge, skills and attitudes. For example, ensuring that knowledge, skills and attitudes are assessed, but not given due attention to the meaning of the task for the students, the teamwork which may be necessary to complete it or the students' prior experience. Their view is '... based on the assumption that individuals and tasks can be separated and described independently of each other when identifying competence', which (Dall'Alba & Sandberg, 1992, p. 3) argue is not the case.

The behaviourist, generic and integrated approaches, which typically perceive competence in terms of attributes, not only tend to produce narrow technical skills, but also ignore the worker's meaningful experience of practice (Dall'Alba & Sandberg, 1996).

An alternative conception of competence: An interpretative-relational perspective

Sandberg's (1994) intentional view of competence represents a new way of looking at competence where the individual's dynamic conception of the work, and his / her relationship to it is recognized.

Phenomenographic approaches have been used to uncover intentional dimensions of learners by studying their conceptions of the world around them (Sandberg, 1994). Phenomenography can be enriched through phenomenological principals and concepts about human experience. Such a perspective of competence does not appear to be well researched in the literature.

From a phenomenological viewpoint, human beings have access to their reality only through the intentional character of consciousness and, as such, is always directed towards something other than itself. As Sandberg (1994, p. 54) explains – 'the intentional character ... is not only the basic condition for our access to reality, but also for how meaning can appear within our lived experience of reality'. Thus, '... each attribute used by the workers in accomplishing their work is based on a particular meaning which is intentionally constituted through their experience of the work' (Sandberg, 1994 p. 55).

The interpretative approach to human competence reacts against the cognitive approaches which assert that workers' conception of work result from an inner representation of an external work. Instead, advocates of interpretative approaches argue that when workers conceive their work, they are actively involved in making sense of it (Sandberg, 1994). 'placing lived experience at the center overcomes the most fundamental limitation of traditional approaches in which this experience is nullified' (Dall'Alba & Sandberg, 1996 p. 5). These authors argue for an alternative view which enables students to develop competence through the experience of vocational learning and practice. This view of competence development is ultimately suited to vocational education practice because it is conducted through engaging in practice in the workplace.

From this view, Dall'Alba & Sandberg (1996 p. 13) propose principles for professional education, which can also be applied to vocational learning in the practical sense, that is:

1. *Structuring and shaping the educational programme* refers to taking the point of departure from the students' experience of vocational practice as a principle around which an educational programme can be structured.
2. *Sense of skilled practice as a whole*. Students need to develop a sense of what vocational practice involves from the beginning and throughout their studies. Ways of regarding practice must also be questioned. Dall'Alba & Sandberg (1996) assert that critical reflection by students about the relationship between education and practice is essential to effective educational programmes.
3. *Significant of parts in the whole*. Students need to learn about the sense of vocational theory and practice as a whole, and about the place and significance of parts in the whole.
4. *Experience of essential aspects of practice*. Students must gain experience themselves, whilst engaged in vocational practice, and not just observe an experienced practitioner.
5. *Integrated knowing-doing*. Emphasis must be placed on developing an integrated knowing-doing, because engaging in vocational practice and reflecting on it are central aspects of competence development.
6. *Suitability of methods*. Part-whole relationships imply that no one set of procedures for educating are equally applicable to all educational programmes. It is necessary to provide students with ways of experiencing practice in a range of situations.

7. *Assessment and other feedback.* The impact of assessment on student learning has been demonstrated as substantial. Assessment must therefore focus on the essential aspect of practice. In competency-based training, assessment tends to highlight the readily measurable, over-emphasising detail, rather than promoting the essential aspect of competence. 'In this way, practice is trivialised through assessment which fails to support competence development (Dall'Alba & Sandberg, 1996, p. 15). Learning about vocational practice must be kept in focus.
8. *Outsiders versus less experienced colleagues.* Critical to the success of students achieving in vocational practice is the extent to which they are maintained as outsiders on the margin of the 'trade', as opposed to being regarded as less experienced 'tradespersons'. If students are to learn competent vocational practice, they must be able to fully engage in work practice. Hence, the responsibility for success of the teaching-learning situation in relation to vocational education, rests with teachers, students and employers.

Research examples in vocational education

Using such an interpretative approach to human competence, Gerber & Velde (1996, p. 6) demonstrated in their Australian study of 52 administrators and clerical-administrative workers located in business colleges, that competence for clerical-administrative workers was a multi-faceted and holistic concept. A phenomenographic method was used which sought answers to questions about the respondents' experience of clerical-administrative practice and the associated meaning that the work has for them. These authors recommended a more enlightened and holistic view of competence which offered 'a powerful alternative to consider when seeking to clarify the nature of this concept [competence] in workplace performance ...'. One needs also to aim for a fuller understanding of competence which is suited to times of change and uncertainty, and to understand the variations in competence.

A study by Velde & Cooper (1998) evaluated the effectiveness of workplace learning within vocational education at a private boys' college in Queensland with students, teachers and employers. The results illustrated that the majority of employers perceived the meaning of competence from a behaviouristic perspective, that is, it related to the level of skills or standard acquired, or to be competent at the task. These results were in contrast to some Australian authors who assert that an integrated (knowledge, skills and attitudes) concept of competence ... 'has been adopted by the professions and to some extent all occupations in Australia' (Gonczi et al, 1997, p. 91).

Half of the sample of employers in the previously mentioned study (Velde & Cooper, 1998) expressed concern that competency-based training restricted competence to skills, did not allow for real-life situations, for those who were exceptional, nor did it cater for specialisation.

Work is a vital human activity within which individuals can develop their sense of self, their ideas about how relationships work and their understanding of society (Kovacs, 1986). This was evident in Velde & Coopers' (1998) study where students, employers and teachers frequently commented on the benefits of vocational learning as helping students to acquire work attitudes, confidence, self-esteem, communication and human relationship skills.

The conception of competence: A critical field for research and practice in vocational education

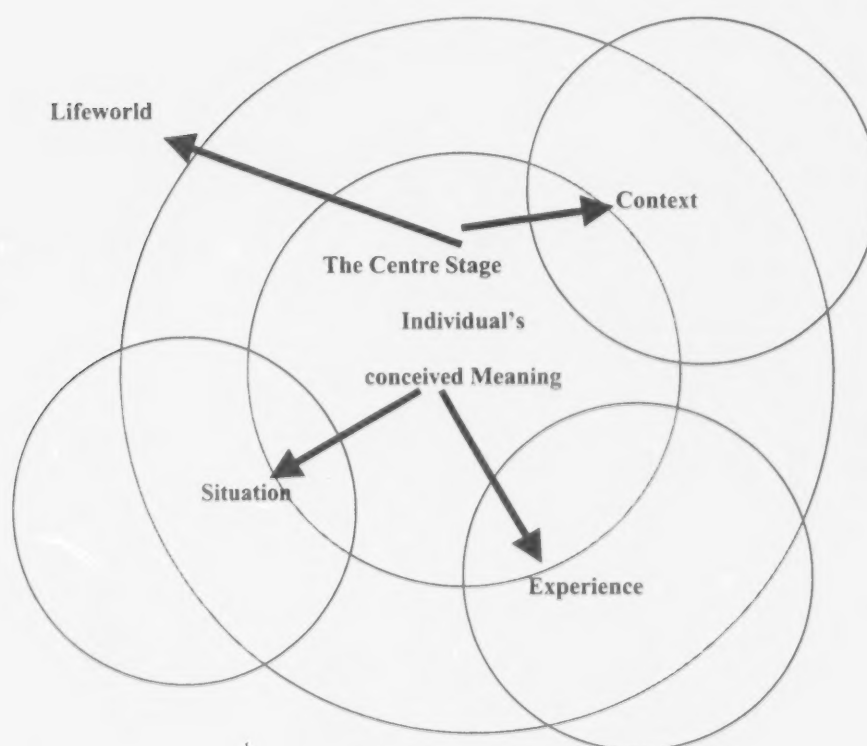
Competency-based training has been mostly implemented without sufficient debate, analysis and critique (Harris et al, 1995), in many forms, situations and countries. It has been and is currently being perceived as one answer – some would argue the *right* answer and some would argue the *wrong* answer – to the complexities and difficulties of reform in education and training. The integration of an interpretative approach to competence, which includes the individual's dynamic conception of the work and his / her relationship to it, with a 'relational' model, which acknowledges the embedding of competence in both context and work relationships has the capacity of enhance workplace learning and to enrich practice.

The conception of competence that one holds and ultimately interprets in workplace practice is vital, because it can either limit learning through a focus on discrete tasks, or extend learning through a more holistic relational and interpretative approach. An interpretative-relational approach to the development of competence includes all elements of a workplace environment, that impact on learning, i.e. the individual, the context, the different variations in competence and workplace relationships. Such an approach is analogous to learning theory which now emphasizes that '... in a situation approach to learning, the authenticity of activity and circumstances assists the development of knowledge and its transfer' (Billet, 1995, p.21).

Figure 1 illustrates an interpretative/relational conception of competence. It positions the individual at the center stage because human competence originates from the lifeworld and the workers' conception of their work. 'These conceptions provide the point of departure for identifying and describing competence' (Sandberg, 1994, p. 59). Therefore, the context in which a person works, the situation and their experience, cannot be separated from their conceived meaning of the world around them. The illustration in Figure 1, therefore, is organic in nature and illustrates that these components are not separate, but rather part of an inter-meshing whole.

The question of whether students are prepared for the workplace can be answered either positively or negatively, depending upon the view of competence adopted. If competence is perceived as attributes to be acquired by individuals, educational institutions can never totally prepare students for the broad diversity of work which is required. If, however, competence is perceived as a way of conceiving issues and problems that are relevant to the workplace, then education can help students to develop this form of competence (Sandberg, 1994).

Figure 1. Interpretative/relational Concept of Competence



A interpretative-relational conception of competence can also facilitate the notion of work as a 'vehicle for the creation of selfhood and of forming and transforming the world' (Kovacs, cited in Gonczi, 1997, p. 86). Such a view then ensures that the meaning of the work for the student or worker, as he or she engages in vocational learning and practice, is ultimately where it ought to be, at the centre stage!

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While evidence shows that more of the same leads to utter defeat, nothing less than more and more seems worthwhile in a society infected by the growth mania. (Illich 1973:8)

Learning is a place where paradise can be created. (hooks 1997:207)

Working as labour, or working to live?

In the current neo-liberal economic and political climate of globalising capitalism, development is more and more about an increase and accumulation of things benefiting a minority who is busy shaping life-styles and feeding desire. This comes at the expense of the majority of women, men and children who are under threat of losing their capacity to fulfil their needs of and rights to expression, creativity, conviviality and control over their own lives. So-called development or progress in the developed nations is increasing the level of deprivation of marginalised groups and communities, particularly in the South. With growing pressures on their means of production and practices, a disregard for local knowledge systems, systematic undermining of cultural values and ruthless exploitation of their resources for the benefit of the wealthy, healthy and powerful, their livelihood security is at stake. Human and non-human life has been reduced to a commodity, valuable only in so far as it contributes to profit for a few. (Miles 1999:251) Increasingly, the South will be the supplier of primary products and cheap labour for the consumer North.

This is the context in which we endlessly hear about lifelong learning, learning organisations, learning societies etc. The argument is that it is essential to learn and develop continuously in order to hold on to jobs or get new employment under the fast changing conditions. The education and training response has been to do more and more research of vocational learning strategies and the education and training that employers want. Current education and training initiatives offer individuals who do not want to be left behind in the competitive market of winner takes all, courses in accelerated upskilling, reskilling, flexibilising. (Anderson 1994; Bouchard 1998; Gee et al 1998) While adult education and training is thus called upon to ameliorate the consequences of neo-liberal policies, I would suggest we might instead turn to how education can support the efforts of those who have never, or only intermittently been part of the market, participating in what Illich called the growth mania (Illich 1973). For them the prospect of ever becoming part of the formal economy is extremely remote, despite all the promises of job creation and employment opportunities.

This paper begins by re-connecting working with living rather than employment. It suggests that employment is a passive verb that implies something given to someone else, rather than something which someone actually does. Similarly, it rejects the deficit notion of unemployment as synonymous with not working, and hence the suggestion that only employment-type work (and the learning directed towards it) has a value and worth. (Yeo 1996) Instead, the paper adopts a livelihood perspective as the basis for investigating how men, women and children, young and old, put knowledge to work in order to realise casual income earning opportunities or produce things in response to immediate needs. By investigating livelihood activities the paper focuses on the work that has been made invisible for generations, the work that is constantly de-valued and exploited. Such work is concerned with supporting and sustaining the basic conditions related to life itself. It is work like teaching youth and caring for sick, rebuilding neighbourhoods and harvesting and preparing food, maintaining a safe and healthy environment and creating artefacts and stories that build hope for the future. (Hart 1996; Mies 1999; Shiva 1997)

This kind of work is often described as subsistence work or survival work. It is associated with poor rural and urban communities whose activities are oriented towards creating food security, adequate shelter and a voice in decision-making. (Newman 1979, Elliot 1994) The first part of this paper proposes that livelihoods offers a more appropriate and useful framework for describing the condition and process of working and learning, than the notion of subsistence.

In support of the livelihoods argument, the second part of the paper tells an exemplary story of learning in and through collective struggle. This means shifting the perspective from individual based learning to learning within the micro-level of social relations. An analysis of some of the lessons learnt during the work of rehabilitating a community dam in Southern Zimbabwe leads us to ask whether there is any evidence of emancipatory impulses, here.

Finally, the paper suggests a role for radical educators in assisting and supporting the process of learning in social action through initiating dialogue towards 'political growth and the confidence to challenge what is generally taken for granted as inevitable.' This involves 'deriving theory from the authority of lived material experience, and using it in ways which connect with the similar or related experiences of others, in order to establish a critical mass which can join together to develop collective forms of social action to achieve political change.' (Thompson 1997:145-6)

From working for subsistence to working as livelihood activities

Mies and Bennhold-Thomsen define subsistence production as production of life, which includes

all work that is expended in the creation, re-creation and maintenance of immediate life and which has no other purpose. Subsistence production therefore stands in contrast to commodity and surplus value production. For subsistence production the aim is life, for commodity production it is money, which produces ever more money, or the accumulation of capital. (Mies 1999:20)

In opposition to the general pessimism that there is no alternative (TINA) to global capitalism, Mies and Bennholdt-Thomsen suggest that subsistence is the alternative (SITA), an alternative that begins with the awareness that the utopia of a socialist, non-sexist, non-colonial, ecological, just, good society cannot be modelled on the lifestyle of the ruling classes - a villa and a Cadillac for everybody, for instance - but must be based on subsistence security for everybody. (Mies 1999:4) The subsistence perspective, what Hart in 1992 called working and educating for life (Hart 1992), is underpinned by a view from below, that is, a view that starts with everyday life and its politics, and in particular the strategies of women to keep life going (Mies 1999:3). This is the very work that has historically been omitted, undermined and disappeared in considerations and theories of work that are based on the idea of labour in employment. While women's awareness of their own capacity to subsist, and having control over the means of production to subsist, gives them a sense of dignity, pride and courage, the capacities and the resources they draw on are branded underdeveloped. Knowledge and skills that underlie this work are only recognised in so far as they can be exploited by employers.

The subsistence perspective with its view from below re-ascribes value to the work of women and other excluded groups and offers an alternative perspective to that of the powerful and elites within a given society. However, it is limited in its economistic framework:

The subsistence perspective promotes another idea of economy - not as a system aimed at the constant expansion of industry, of production and consumption of commodities and of capital accumulation - but: an economy that puts life and everything necessary to produce and maintain life on this planet at the centre of economic and social activity. (Mies 1999:5)

In order to study the relationship between work and learning, and the production of really useful knowledge (Johnson 1978) measured in terms of securing human life and environmental health we need a more all-encompassing notion of working and living. Working, as expending, devoting individual or collective energy in accordance with the demands of people, plants, animals and the environment, and in consideration of land, climatic conditions, the seasons, would be best captured as livelihood activities. Taking livelihood activities as the basis for an analysis of working and learning combines the view from below with the emphasis on life. It shares with the subsistence perspective the concern for collectivity, mutuality, solidarity and inter-dependence and the insistence on self-reliance in terms of ownership of the means of production.

However, livelihood goes beyond notions of mere survival, which could be associated with basic needs and the bottom line. Instead of focussing predominantly on work in a fairly instrumental way, it considers all human activities, including those not directly associated with daily subsistence. Illich reminds us, that people need not only to obtain things, they need above all the freedom to make things among which they can live, to give shape to them according to their own tastes, and to put them to use in caring for and about others. (Illich 1973:11) Livelihood activities include the numerous cultural and aesthetic activities in which individuals and communities engage in order to restore, reproduce and re-invent their identities, sense of belonging and dignity. As such, the notion of livelihood includes a sense of well-being rather than mere survival.

The notion of livelihood activity reinterprets work as a verb rather than a noun: it is about doing, rather than having. In this interpretation another link becomes clear: that between individuals and a-symmetrical structures of power. Those who work but do not have work have little or no access to public funding; their exclusion from the market goes hand in hand with issues of housing and healthcare. are excluded. On the

other hand, those who have employment are the ones who get subsidies for housing, access to services rendered etc. (Illich 1973:41)

Livelihood is both a system of activities and a condition of being within the context of particular socio-economic, historical, geographical and political dimensions. (Bebbington 1999; Moser 1998; Reid 1995) Individual livelihood systems are shaped by changing physical and human environments. Conducting an investigation of learning in /through livelihood activities (Pretty et al 1995) cannot therefore be based on general questions such as what do you do for a living?, because each days activities vary. Instead it more usefully entails asking different members of households and/or communities questions such as what did you do today? and what do you do on other days? The response will generate long lists of activities which constitute the work performed daily, cyclically or seasonally. The lists will include both productive and reproductive activities, individually and collectively performed ones and those to do with social relations and community building. An analysis of livelihood activities can give value to what may not have been thought of as work, and also offer a basis for analysing social relations, notably of gender and generation, (Beall 2000) as much of the work would include other participants. A comparison of work executed by different household members at different times allows us to understand how tasks are distributed within households and communities, and how different individuals and communities respond to socio-economic, political and environmental changes, by adjusting work patterns in order to meet immediate, medium and long-term needs. It can also lead to insights about how people build and draw on relationships within their various communities of practice. (Lave & Wenger 1991; Wenger 1998) Such an analysis allows for the illumination not only of processes and relations of production, and of distribution within the context of gender, intra-household relations and social networks, (Beall 2000) but also of the different and differentiated use and production of knowledge embedded in working.

Working knowledge, defined in terms of livelihood activities, may be knowledge about changes in policies, about who is who is the hierarchy of decision-makers and who can grant access to resources and services, about how trees grown for cash impact on the soil and water table, and how to draw on old peoples knowledge of local herbs and roots in order to cure ailments. It might include new insights about how crafters must change their patterns and wares in response to new fashions (Lund, Nicholson&Skinner 2000), and how economic structural adjustment policies effect access to health services, forcing women to factor time-consuming and expensive trips to a remote clinic into their daily chores. Such knowledge is both useful and important - and because such knowledge is inextricably linked to daily life and living, it has to be constantly re-assessed, re-discovered and re-made in terms of changing conditions. This means interpreting knowledge not as a reified object for transmission or even upgrading, but as dynamic.

What do you know and need to know in order to make a living, and how do you learn it? are very different questions for an urban woman who sells vegetables as a street trader while looking after a small child, and a homeless youth who, after being thrown out of home when disclosing his HIV positive status and now collects bits of scrap metal for a living. What they have in common is life on the margins of society, of health, of a sustainable environment. They may also share a dream of a different future - one in which the short-term struggle for food, shelter and security is replaced by access to and provision of the basic necessities, including those of happiness. For both, the use and production of new knowledge is part and parcel of daily experiences tied in with livelihood activities within the framework of power.

Identifying and interpreting learning in terms of livelihood activities means looking at learning in and through struggle. Struggling to make a living, to express creativity, to channel energy into generating ideas also implies getting into conflict with other, more powerful parties. Thus, it is not enough to know, or to be able to do - but access to the resources and conditions that allow you to exercise your knowledge and practice your skills are crucially important. For example, a small community of informal shack dwellers may know all they need to in order to build more permanent structures to live in; however, without the land and the materials they cannot exercise this knowledge. At the core of their collective struggles may therefore be a dispute over land-rights, and access to the resources that allow them to build the houses they wish to live in.

Many small battles are fought individually or at the household level. Beall gives a string of examples that illustrate how responses to household security may involve changing expenditure patterns, reducing overall consumption, increased indebtedness and adjustments in family diet. Other instances of belt tightening exercises reported are labour intensive solutions to housework and reducing costs by use of fossil fuels for cooking, even in electrified areas. (Beall 2000:9) Other issues can only be tackled collectively and across households. Sharing child-care and transport, exchanging goods for services are examples. The following case study offers a few examples of the knowledge produced in and through collective struggle. The research underlying the case example was conducted as part of a larger study into drought mitigation strategies amongst resource poor communities in Southern Africa. Initially, participatory rural appraisal processes conducted with villagers resulted in audits and assessments; these formed the basis for mitigation planning

for the community. Assessment activities included the production of activity clocks with women, men and children, seasonality diagrams, on-site inspections, and the like.¹ The research findings were then used to develop a range of participatory learning activities targeting community development practitioners, aid workers and policy makers in disaster management.

Living with drought in Banga

People in Banga, in Southern Zimbabwe, survive by growing maize and vegetables and buying and selling other things. The story of one woman, Mrs Madzimure, is typical: She lives with her ten children in the village while her husband works in a town nearby; his remittances are the major source of income for the household.² In good seasons, she also manages to sell surplus vegetables, and home-brewed beer. The drought of 1991-2 had destroyed their ability to resist hardships: there was nothing to eat, and women spent all day fetching water from far away as their small community dam had fallen into disrepair. The government offered food relief, but women with working husbands were not eligible for free food. The villagers of Banga became reliant on emergency aid to survive. It was only after the drought that we realised how much the dam had helped us, remembers Mrs Madzimure.

Foley suggests, that economic and political changes may create the material conditions for social movement activity, but for people to become involved something must happen to their consciousness - they must see that action is necessary and possible. (Foley 1999:103) For the community of Banga the suffering endured during another drought was the catalysing moment that made them turn to their local councillor for help. He put them in touch with a non-governmental organisation, which in turn enlisted the help of other agencies. They formed a village committee and collectively planned and implemented a programme to rehabilitate the community dam as a first step towards establishing water and food security. This, in turn, became the beginning of a programme of action involving the cultivation of drought-resistant crops and initiation of income generating activities.

The story of Banga Dam offers a useful example of what constitutes working knowledge from the perspective of the people who use and produce it. In the first instance it is tied to livelihood security, and it is based on both a mutual plan of action, interdependence and an outlook towards collective wellbeing. Given the rough outline of the story, five lessons can be discerned:

- * the production of knowledge about social links and networks
- * an understanding democratic principles of governance
- * the ability to make policy decisions and rules
- * a practice of negotiation and conflict resolution skills
- * Life-supporting and entrepreneurial skills

(1) Knowledge about social links and networks

In her analysis of womens transition to urban small business success in Botswana, Ntseane has underlined the importance of informal non-competitive networking amongst women: learning from and with others is valued and seen as the basis of building success. (Ntseane 2000) Banga Dam represents the cooperation between many different stakeholders, ranging from local villagers to representatives of government. Networking with other communities is part of the process of learning: as one woman said: The reason why I went to Ruzengwe was to see what other people were doing and learn from them for we are in the process of trying to do what they have already done.

(2) Understanding democratic principles of governance

Along with the chief and headmen, women who drew water from the dam, livestock owners, vegetable growers and brick makers all depended on the dam water for their livelihoods, and in different ways contributed to its damage. Only collective decision-making would result in a sense of collective ownership and responsibility. Through problem-posing and analysis they arrived at plans that would be mutually beneficial. As one villager explained: That transect walk was an awareness building for us to know what needs repair and attention around the dam, because we do it ourselves. Having analysed how own social behaviour endangered the dam, and how certain economic activities such as brick-making on the edge of the dam caused damage, villagers decided on appropriate action to rectify the matter: The homestead should be taken out. And the bricks. We dont want to see brick moulding in the catchment area.

(3) The ability to make policy decisions and rules that would protect the interests of all instead of a few: Villagers called a meeting to decide on rules and laws to govern the use of the dam. They also worked out plans of how to enforce their rules, and decided on mechanisms that would regulate the participation of people who had not been part of the initial workforce. This was clearly argued for in terms of the common good: If we protect our dam it will also protect us from hunger and other problems. We might even have school fees for our children.

(4) Negotiation and conflict resolution skills:

Intra-household conflicts were inevitable as they involved some individuals and households losing immediate access to water. The assumption that cohesion and coherence rather than conflicts are at the basis of intra-household relations would be romantic. (Wolf 1997) Yet, struggles such as Banga Dam show that only negotiations and work towards a common understanding and agreement will ensure benefits for all. So when villagers agreed that no one should cut trees upstream, there was dissent: Some people argued why they were to stop doing practices they were used to.' The committee responded by conducting an education session: 'We sat down with them and explained the reasons why and we now have trees growing upstream.

(5) Life-supporting and entrepreneurial skills:

The supporting service organisation suggested that part of the process of dam rehabilitation should be a field trip to a neighbouring village where villagers would learn about other, related projects aimed at increasing health and prosperity. On this visit they were taught specific skills, such as building and maintaining simple hand pumps using locally available materials, and how to run a seed-trading store.

The outcome of this process of working as a community of interest was an articulation of learning; as Mrs Madzimuri commented 'If hunger ever came back again we are prepared for it here in Banga. We learnt a lesson and we are much wiser. In practical terms, they had devised a long-term collective strategy: We have invested in our garden. We will sell the vegetables and bank the money so that if hunger (*synonym for drought*) comes again, we will use that money to buy food. In this story, the concerted efforts of various members of a community managed to reconstruct a basic natural asset in such a way that it would offer a sustainable basic resource for all. This involved changing the distribution of access: instead of few villagers exploiting the dam for immediate benefits and thus threatening its existence in the long run, rules for all would ensure long-term security through sustainable use of the dam, in the future. Learning to think collectively rather than competitively, here, got them closer to experiencing hooks place where paradise can be created.

Social action for political change?

Thompson warns that educators may not have greater insight into what might constitute emancipatory learning than people whose communities, and whose very life very often depends on it. (Thompson 1997:150) The Banga Dam example offers a clear illustration of how working and learning are closely tied together. There is clear evidence that villagers unearthed, improved and created new instrumental skills, such as how to erect a contour fence, and how to assess the impact of continuous pressure on the fragile construction of a dam wall. They also developed old and new communicative skills, such as negotiation and conflict resolution skills. There is no doubt that they generated really useful knowledge in order to improve their livelihood security in the immediate and medium term. However, it is uncertain whether their learning went beyond the local experiential level towards understanding the structural causes and broader connections of their condition. Is the assertion that we are now much wiser an indication of critical, emancipatory learning?

There are some indications of changed power relations within the community of Banga. In response to a question of how livelihood activities are different during normal times and in times of stress such as drought, a woman described how men and women suffer differently: while women might spend all day trying to draw water, and then stay with the children, often going without food, men eat elsewhere and do not share their food with the children. After women, women and children had worked together in order to repair the dam, there was evidence that men had begun to draw water and participate in what was traditionally considered women's work. Did the collective effort in which women played a leading role both through their physical work and through active and vocal participation in decision-making result in a shift in status, distribution of roles, and power positions? If the evidence of the neighbouring village was anything to go by there were clear indications that women had indeed emerged in strong leadership roles in new projects. From the perspective of women, then, access to decision-making bodies and participation in community structures may indeed represent emancipatory learning.

I would argue that educators can play an important role in initiating and supporting critical dialogue aimed at action that goes beyond the practical, instrumental and leads to radical learning and the knowledge needed in order to effect change on a larger and also strategic scale. Such a role could be performed both at the community level as part of working and educating for change, and in the classroom, with a variety of students.

Firstly, what kind of educational interventions might happen in the community? Building on the strength of a struggle won through the rehabilitation of the dam and the formation of community structures an educator should take the opportunity and facilitate and guide moments of reflection and evaluation, focussing analysis on the (structural) causes of poverty and landlessness, helping with the articulation of ideas and problems and offering new information necessary to extend the perspective beyond the local towards a broader context. In

this way s/he can assist the consolidation of ideas and the construction of counter-hegemonic ones. (Nirantar 1997) Such a process might involve asking questions such as

- * How is the question of who controls the dam related to other issues of land use and land ownership?
- * How do men and women use their allocated plots differently, who works the land and who receives the money from the sale of crops? Why do women have little say over resources and how does this link to their position on households and communities more generally?
- * The film shows one example of how the conservation of natural resources is hard work that demands ongoing commitment. How does this commitment fit into the larger picture of the region, and the world, in which richer nations are consumers who do not conserve precious resources such as water? How can this contradiction be explained? (Von Kotze 1999:135-6)

Secondly, in classroom-based work, educators can use stories such as 'Banga Dam' in order to stimulate thinking about alternative approaches to working and learning. Case studies such as those documented in Australia (Foley 1999, Newman 1994;1999) and Scotland (Crowther, Martin & Shaw 1999) are important inspirations and tools for radical educators, because, as Foley observes: To more fully realise the value of such learning we need to expose it. (Foley 1999:3) Investigating livelihood activities challenges prevailing perceptions, such as the notion that people are poor because they are inactive, passive victims of circumstance, rather than agents who take care of their lives as best as they can within the constraints of resource-poor conditions and powerlessness. From here, it is a small step towards recognising that far from being a natural occurrence, droughts and other hazards are created risks: created by people in positions of social, political and economic power. This should lead to an understanding that really big changes will have to take place if we want to effect livelihood security for all. (vonKotze 1999)

Conclusion

Education, training and learning are increasingly approached as individual processes, even if the learner is part of a team, and even if learning is perceived as a by-product of participation in other social practices involving other actors. (Wenger 1998). The discourse of lifelong learning, the emphasis on competition and competitive advantage, the increasing focus on the individual in neo-liberalism, and assessment based on the measurement of personal outcomes rather than collective achievements are re-enforcing this perception. However, when investigating learning as part of livelihood activities we must build understanding of interpersonal relations, and how solidarity is forged around the identification and definition of a common enemy. Struggles of excluded groupings for communal health, decent housing, the conservation of bio-diverse environments and the like show us the importance of collective energy and purpose and the practice of mutuality and reciprocity. Poor and marginal communities may not have power in terms of material means, but they have power in numbers.

This is a lesson which was well-learned during any of the liberation struggles in Southern Africa. South Africa has a proud history of popular struggle and while the wave of grand social movements may have passed, collective social action is still the way in which groups achieve gains for access to resources and services, land and rights. Identifying stake holders, knowing who to speak to and how and when, and clarifying interests, learning how to formulate claims and present convincing arguments are basic conditions for any struggle. Building community structures, forging links, networking, expressing solidarity are means towards increasing the power base - both in terms of access to people in positions of leadership and decision-making and access to resources. How such struggles are organised and what and how people learn in order to form representative structures and work towards a common goal is an important subject of research and documentation.

In South and Southern Africa, the learning that takes place in such action has remained largely undocumented, and if people forget what they achieved through concerted social action in the past, they cannot draw on the lessons in the future. Peoples education of the eighties aimed at eliminating capitalist norms of competition, individualism and stunted intellectual development, in favour of collective input and active participation by all, so that workers would be able to resist exploitation and oppression at their workplace. (SASPU National 1986) If we want to understand how we lost the focus on the second enemy', capitalism, during the struggle against apartheid, we need to critically investigate what happened during the large process of learning and struggling together.

1. For a more in-depth description on PRA/RRA/PLA activities see Pretty, J., Guijt, I., Thompson, J. & Scoones, I. (1995) *Participatory Learning and Action. A Trainers' Guide*. London: IIED

2. The story of Banga village is told in the film: Banga Dam: a study of drought mitigation. One Community's experience. This film is part of a pack of learning materials for Southern African development workers, von Kotze, A & Holloway, A (1999) *Living with Drought. Drought mitigation for sustainable livelihoods*. CapeTown: David Philip Publishers, and London: ITP.

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THE MORE THINGS CHANGE: WORKPLACE TRAINING AND GENDER POWER RELATIONS

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Introduction

Australia has recently concluded a decade of training related activity aimed at making its workforce more skilled, efficient and productive. The National Training Reform Agenda (NTRA) (1989-1996) was the first iteration of this reform and, although now overtaken by Coalition government training initiatives, is worth analysis because of the methodology used and conclusions are applicable to more recent contexts. This paper critically examines some of the knowledge that NTRA policy produced about work and training and explores how women became 'known' in these policy texts. The paper also briefly examines contemporaneous practices in workplaces that also made women workers 'known' in certain ways. The 'working knowledge' of both policy and workplace practice are seen to keep women 'in their place'.

The NTRA emphasised the 'upskilling' of the Australian workforce and aimed to increase productivity and Australia's international competitiveness. In its official documentation the NTRA espoused a 'new deal' for Australian workers in relation to training and advancement through the Australian Standards Framework. The strategies of the NTRA included the requirement that all training be competency based; the development of competency standards for occupations; the development of a national framework for the recognition of training; the encouragement of structured on-the-job training leading to qualifications and/or career paths and increased industry participation in and responsibility for training of those already in the workforce (NTB, 1991; ANTA, 1993).

Although women were not initially identified as a group that could specifically benefit from the NTRA, it can be extrapolated that such policy strategies had the potential to offer working women significant gains in skill enhancement and advancement. Historically, women had participated in less entry level training, less on the job training, had more breaks in service than men and were still clustered at the lower end of the job hierarchy (Pocock, 1989; Nightingale, 1995). The NTRA had the potential to bring about more equitable training opportunities for such women.

Overview of Methodology

The word limit on this paper prevents a comprehensive discussion of methodology. Briefly, my analysis of NTRA policy documents and workplace practices was informed by feminist post-structuralist principles. The concerns of my study related to how women were constructed as subjects within policy documents and through the discursive practices operating in certain organisations and how this positioning affected their access to training.

The study is a broad based discourse analysis, examining the relationship between 'texts' and social, cultural and historic contexts (Patterson, 1997). I embrace Scheurich's (1994) view that the policy process is a struggle over symbols and that a 'post-' analysis of policy is interpretive and attends to the symbolic. This form of discourse analysis does not involve the close linguistic analysis that Fairclough (1989; 1992) calls 'critical discourse analysis', in which a detailed socio-linguistic analysis of language strategies occurs. Rather it takes a more general view of how meaning is made in texts as Luke (1995, p. 6) states:

...many of the new social conflicts are about representation and subjectivity. In terms of representation this involves the production and consumption of texts...and the rights to name, to construe, to depict and describe. In terms of subjectivity, they involve how one is being named, positioned, desired and described.

Luke suggests that one form of poststructuralist research can examine the links of power and knowledge through examining representation and subjectivity in texts. These may be written texts, spoken language or media representations. The 'naming' Luke refers to is at the heart of my analysis of both policy and workplace practices.

In the analysis of policy I utilise Foucault's (1997) concept of *geneses* to examine the unproblematic way in which training is presented as assisting the economy and empowering all workers. I also identify other discourses within the text of the NTRA. These discourses are particularly pertinent to women within the context of labour market and workplace power relations.

In exploring these discourses I utilise Capper's perspective of policy analysis (Capper, 1992, p. 104-105) which suggests a range of ways through which discourse can be analysed. These include examining who is articulating the discourse, the level of focus on dissensus or consensus and the extent that the text acknowledges that social power, control and domination are everywhere. Capper also argues that attention should be paid to whether the text is presented as 'commonsense' or self evident truth. In relation to language she suggests an examination of shifting or deferred meanings and the use of terms that maintain the status quo in relation to non-dominant groups. While referring to text here, it is the historically constituted context and my reading of it, which helps make meaning of the language.

Analysis of practices in workplaces was also informed by poststructuralist principles. There is a growing body of analysis of organisational and workplace practices which utilises a poststructuralist perspective (Cooper and Burrell, 1988; Clegg, 1989; Hearn and Parkin, 1993; Linstead, 1993; Chia, 1996; du Gay, 1996) to examine power relations and worker subjectivity in organisations. There is also a growing body of literature which includes a feminist poststructuralist analysis of work related practices. For instance, Nightingale (1992) has examined the gendered discourse of 'flexibility', Calas and Smircich (1992) have explored the gendered language and practices inherent in organisational analysis. Martin (1990) has deconstructed the discourses around female embodiment in the workplace and Pringle (1988) has shown how control of women in the workplace is largely effected by the construction of femininity discourses in our culture.

In examining the practical field in which discourse is deployed, Foucault (1977) illuminates discursive practices which are techniques created to classify, characterise, observe, monitor, shape and control behaviour. He cites disciplines such as: the art of distribution, for example, enclosure or partitioning; control of activity, for example, the timetable; the organisation of geneses, for example, seriation of learning activities over time, as having direct effects on the body. He also gives examples of discursive practices that can discipline and place the body under surveillance thus both individuating and normalising behaviour. Discursive practices are thus the processes that render individuals knowable: in the case of this study, knowable to management and to themselves.

Poststructuralist studies of discursive fields surrounding work and workplaces, generally employ techniques of discourse analysis to highlight what Patterson (1997, p.428) calls the 'intersection of different practices with the 'subjects' of those practices'. Patterson (1997, p. 428) maintains that this 'identity work' extracts 'the political from the meaning function'. Townley (1993; 1994) has analysed human resource management in organisations from a feminist poststructuralist perspective. Her work involves a close examination not only of the discourse of human resource management but its seemingly benign 'pastoral' practices. In her discussion Townley (1993; 1994) draws on Foucault's (1977; 1980) concept of power/knowledge, in which workers are made known and controlled through a series of observation practices and through the discourses used to construct their positioning. Practices involving classification, codification, categorisation, tables and taxonomies are used. In workplaces a range of human resource management tools, such as selection, training, development and remuneration, job classification and performance appraisal act to label, assess and report on workers thus governing their behaviour. Du Gay (1996) has used a form of discourse analysis to examine the representation or 'labelling from above' by management and the actions of those labeled. Although gender issues are not his focus, du Gay offers a comprehensive poststructuralist analysis of how workers are named, described and discursively positioned. His work focuses on how discursive practices 'construct particular identities for employees and how the latter negotiate these identities in everyday life' (du Gay, 1996, p.7).

An Analysis of National Training Reform Agenda Policy

The overarching discourse in NTRA documentation relates to the Foucauldian (1977) concept of geneses. Geneses may be regarded as a 'systematic, standardised, detailed and disciplined approach to knowledge and time' (Townley, 1994, p. 74), whereby learning or skill development occurs in building block sequence over a period of time. The concept of geneses can be seen at work in the where there is an assumption that the worker will acquire more skills for career progression or develop into a multi-skilled worker, given appropriate training over time.

NTRA activities that the concept of geneses can be applied to include structured training and development programs, competency based training and related career paths. All of these practices are constructed as offering better quality training to workers. The concept of geneses is articulated through the seemingly 'neutral' language of NTRA policy, '...the National Training Reform Agenda has an important role to play in providing the necessary skill and competency base for Australia's economic development....' [VEETAB, 1993, p. 2].

Another discourse within NTRA policy is that of inclusivity. In several documents, learning and skill development are positioned as being available to all Australian workers. For instance, ANTA (1994, p. 2) states that:

Future vocational education and training must also have the primary regard to lifting the skills of the Australian workforce, *whatever their industry, occupations and employment status.* (My italics)

Statements such as this presented the view that the benefits of NTRA were available to **all** workers. One of the difficulties of this discourse is that it ignores how workers can be objectified in the labour market and workplace power relations. It thus obscures the notion that there may be questions relating to who receives and does not receive training and who benefits most from training. Examination of Australian training statistics indicates that it is the full-time managerial or technical worker who is more likely to receive accredited training (ABS, 1997; Wallace, 2000) and that length of service strongly correlates with the amount of training a worker attracts (ABS, 1997; Wallace, 2000). Women workers make up 75% of the part-time/casual workforce and are more likely to have breaks in service (Rimmer and Rimmer, 1994) thus longer service in the one organisation is often not part of their worklives. Furthermore, many women are not in occupations with a defined career path and are not clustered in the managerial or technical ranks (ABS, 1996; Wallace, 2000). 'Better training' appears not to apply inclusively to all workers, especially the numerically flexible, those in part-time or casual work.

Discursive constructions of mobility and the mobile worker are also evident in NTRA policy. The discursive thread of mobility within the NTRA relates to career mobility and geographical mobility of workers as the following quote indicates:

Those trained will find the mobility across or within industries and across Australia that is one intended incentive to them to seek training, as well as a major benefit to the economy. (NTB, 1991, p. 6)

This construction presents a view of industry and enterprise related structures and processes, in which career progression is available to all. A comparison of the text with the known context reveals a different scenario. The discourses of efficiency and managerialism, which did not spring from the NTRA but parallel it in time have led to downsizing, restructuring and flattening of hierarchies, making career progression less attainable (Limerick and Cunningham, 1993). Emphasis on national recognition of competencies and prior learning and the portability of qualifications assumes that most workers have mobility in terms of moving from one enterprise or location to another and that they have a career path option. Furthermore, within the discourse of mobility there is a utopian view of the labour market where geographical mobility is unimpeded by a dearth of jobs or by life circumstances such as family responsibilities

The NTRA has thus developed a policy model, which does not recognise geographical inequalities and issues of geography and gender. In this policy model the labour market diversity of this country is ignored and scant attention is paid to the needs of non-metropolitan Australia. There is again an assumption here that appropriate work may be available in other locations and that the economy, labour market and social structures can support such mobility. This policy effect may be less problematic for those in metropolitan areas where there is a higher concentration of employment possibilities and a greater degree of services. However, it poses great difficulties for those in regional areas of Australia, where unemployment is high, public transport is negligible, distances and relocation costs are great and family and community ties play a significant role. Furthermore in the discourse of mobility, workers with family responsibilities are invisible.

Flexibility is another discourse evident in the NTRA. 'Flexibility' is a term, which pervaded the rhetoric of the NTRA from the 1989 to 1996 and is still evident in post-NTRA vocational education and training documentation as well as in other policy contexts. It can be seen that the term has several constructions. Flexibility is implicated in functional 'flexibility', adaptability through multi-skilling, and in numerical 'flexibility' through, for example, part-time or contract work. Career, geographical and spatial 'flexibility' whether that be out-working or moving the use of labour off-shore as Probert (1993) discusses can also be examined in relation to the labour market. There also exists, in terms of work, pay 'flexibility' and time 'flexibility'.

Capper (1992) suggests several ways to 'unpack' a discourse; words with multiple, shifting or contested meanings should be examined and the question regarding whose interests are really served by the discourse be asked. 'Flexibility' is one such word. Nightingale (1992) has exposed the contradictions for workers in this term, revealing that time and spatial flexibilities have actually worked in the interests of management and

have served to limit the autonomy of workers. Flexibility can also be contrasted to its binary opposite, 'rigidity' in such a way that it can be seen to be presented as what Capper (1992) denotes as the 'commonsense' option.

This construction of flexibility can be seen to create certain sorts of subjects. Flexibility, while couched in benign terms offering workers increased access to career paths may also produce 'enterprising subjects' (du Gay, 1996) exhibiting the 'collaborative individualism' (Limerick and Cunningham, 1993) of workers so lauded in the 'fast capitalism' texts analysed by Gee et al (1996). These are the flexible specialists needed in the post-Fordist workplace (Edwards, 1993). They are mobile, autonomous and flexible.

The construction of these flexible subjects needs to be analysed against the known context for women workers. Discourses of 'flexibility' ignore the current context of occupational gender relations and do not acknowledge that social power and control are part of workplace dynamics (Acker, 1992). In models such as Atkinson's (1984) and Handy's (1992) those who are functionally flexible may be, indeed are required to be, in the minority of the workforce. Both Reich (1991) and Rifkin (1995), while using different terminology, suggest that those who can be regarded as the functionally flexible make up only a small proportion of the workforce. The often precarious and marginalised labour market situation of women in part-time or casual employment puts many outside those sections of the workforce most likely to be required to be functionally flexible

In summary, it can be seen from the examination of the above that men and women are converged into an homogenous group requiring training investment, and the possibility that workplaces may be gendered and women's bargaining position in them may be weaker, is ignored. NTRA documents 'hide' the contradictions at the heart of human existence' (Cooper and Burrell, 1988, p. 100) through making invisible known complexities in labour market and workplace power relations, especially relating to gender.

An Analysis of Workplace Practices

I examined workplace practices, particularly in relation to training, in two enterprises where women were strongly represented lower down in their organisations' hierarchies. Serendip City Council was a local government instrumentality in which the majority of women were employed in clerical and administrative work and Community Club was a registered club, which employed many women in food and beverage preparation and service.

I identified different distributive and dividing practices in the organisations. In the case of Serendip, the dividing practices operated around the professional/non-professional worker divide. Professional workers were those (usually with university degrees or technical qualifications) who undertook the core work of the organisation and dealt in policy and its implementation or in technical matters such as engineering, while the non-professionals were the support clerical or outdoor staff. At Community Club, the main dividing practice revolved around the permanent or casual status of workers, with other divisions relating to 'skill' also apparent. When examined, many of these dividing practices all quite neatly separated the workers on the basis of gender as well. For example, at Serendip all in the professional cohort were male with the exception of two women in social welfare roles and at Community Club all of the permanent employees were male.

Two of the main discourses employed by management surrounded women's lack of strong work commitment and a discourse surrounding 'making allowances' for women. Both involved knowledge production that conflated women's private and public roles in a way that justified women's seeming disinterest in greater work complexity, responsibility or advancement. 'Being counseled' was one of the main discursive threads in the way management at both of the organisations constructed women workers. All of the managers stated that one-to-one discussions with staff elicited information, about women workers' private lives. While this was a pastoral strategy that all managers saw as benign and supportive, managers also used the information from 'the confessional' (Foucault, 1980) elements of this practice to make judgements about the women's work capability.

At Community Club the managers discussed the women's private circumstances in relation to difficult relationships or gynaecological matters. This knowledge about intimate and personal matters was then used to 'make allowances' for the women. At Community Club the manager discussed a woman with a degree and club experience, who wanted management training, in the following terms:

I know she's trying to start a family so it'd be silly to weigh her down with more responsibility at the moment.

In the discourse of the managers, knowledge about women's private circumstances was used to explain women's lack of ability to deal with work and home-life responsibility and secondly, in the quote directly above, as a rationalisation for women not being offered more challenging work opportunities. Here it can be seen that both the conflation of the domestic and work and issues surrounding women workers as embodied, reproductive females, identified by (Acker, 1990) worked to discursively situate the women as having difficulty in devoting their full attention to work.

There were a number of discursive practices relating to training provision, or lack thereof, operating in one or more of the four organisations. These may be seen to divide, enclose or partition women workers and evidence the 'art of distribution' at work. These practices are sometimes informal, especially in organisations where the management of training is less documented, and forms part of the accepted network of power relations in the organisations.

Eligibility to undertake certain types of training can be seen to be a distributive practice operating in each of the organisations. The types of training range from 'sitting next to Nellie', informal in-house training, formal, accredited training to tertiary education and form an, often unarticulated, 'training curriculum', which may be conceptualised as what Foucault (1977, p. 146-147) calls 'a hierarchy of knowledge; a classificatory table' in which certain types of training are ranked and partitioned. By ordering the objects of the curriculum along a continuum of importance the population is also ordered through eligibility to gain access to these objects. Access to parts of the training curriculum is thus a key dividing practice.

At Serendip, eligibility to undertake certain types of training was allied to an individual's current position of enclosure in the organisation. For instance, in the organisation's training plan there were two categories of training, Core and Business/Personal Performance. Business and Personal Performance Training was truly developmental training and eligibility to undertake this training was available only to those 'who have supervisory or people management responsibilities', 'staff involved in business planning and performance monitoring', 'staff involved in the recruitment or selection of staff': in other words the 'professionals' in the organisation (Serendip City Council, unpublished, 1996, p. 14 -17). As it was mostly male employees, who had the managerial responsibilities and were 'professionals', those who were eligible to attend these courses were predominantly men. Individuals' distribution in the hierarchy of the organisation was directly related to their current responsibilities and their current responsibilities directly related to their eligibility to undertake certain types of training. Two practices of distribution thus operated inter-discursively; one initially positioned the women, the other set the limits on this position.

In addition, at Serendip most of the Core training open to women offered no certification or accreditation. Women in the clerical, word processing and secretarial roles in the organisation received a small amount training in the form of the non-accredited, short courses. Without the additional qualifications and the recognition they brought, it was much more difficult for a woman to move out of her enclosed position.

In relation to the significance of training, the women at Serendip expressed concern about the courses that they were eligible to participate in, as they appeared to offer them skills and knowledge that they already possessed. This concurs with an Australian study (Butler and Connole, (1994) in which the women surveyed complained of demeaning training courses, which covered skills in isolation from the specific industry context or covered skills they already possessed. The women at Serendip, whose comments appear below expressed similar views.

We just do menial little courses. (Lenore, Serendip)

Oh, I wouldn't give us baby little things like customer services courses. We just don't have anything that can sort of get your teeth into. (Louise, Serendip)

The terms, 'menial' and 'baby little things', indicate that these women viewed the training as not meeting their development needs and in some cases trivialising the skills they already possessed. Clearly, these women were asking for more than one-off courses that covered skills they were already using. The type of training offered to the women at Serendip may be seen to be placatory training: women were recorded as receiving some training and training was seen to be 'being done' but it was of the type that was neither developmental nor transferable. Both lack of credentialling and 'just enough' training controlled both the amount of knowledge and skills women could develop and the recognition they could receive for them. Control of the type or amount of knowledge led to dependency on supervisors who did have the knowledge, thus

reinforcing the dependent, less than competent 'daughter' relationship of women workers to their male managers.

At Community Club, enclosure and partitioning in relation to casual and permanent work initially positioned the women. This position was maintained through management discourses surrounding gender appropriateness relating to strength and security of certain jobs, such as door work or handling large amounts of money, and the blurring of the public/private aspects of women's lives. Known personal details were factors in considering the work future and possibility of advancement offered or withheld. In at least one case it appears that when the gender appropriate norms could not be called upon because of the woman's high skill level, highly personal factors such as a possible pregnancy were then brought to bear.

At Community Club a number of those already in supervisory or management roles had attended professional association, CMDA (Club Management Development Association) courses at the expense of the organisation. Only males were targeted for this training because of the jobs they did and their permanent status. The Access Program, a competency based program, recognising prior learning, had the potential to assist those who were not permanent members of staff and who did not fulfil the roles discussed above. However, this was dismissed by management because recognition of current skills and formal in-house accredited training were seen as unnecessary for the women in the organisation because of their status as casuals, lack of mobility and the low skill levels required by their jobs.

Thus, at Community Club those who received structured in-house or external training were those who were managers or supervisors, all permanent members of staff. The women in the organisation, because of their casual status and the roles in which they were enclosed, received on-the-job training of the 'sitting next to Nellie' variety and developmental training was not available to them.

Conclusion

The discourse of geneses, which permeates the NTRA is ostensibly one of progression and inclusiveness: a 'regime' of truth, which has unproblematically positive effects and is available to all. I have argued for an alternative reading of this discourse based around the known position of women in the labour market and around an analysis of power relations in organisations, suggesting that the discourse of geneses was not inclusive and produced the male worker as a subject. On the whole, the training practices in the organisations support this alternate reading. The discursive positioning of the women in this study is one where they are not considered to fulfil core functions. Furthermore, the women are positioned as subjects who are uninterested in or 'unworthy' of developmental training because of the difficulties of their private lives. This subject position excludes them from the positive elements of the discourse of geneses. The discourse of geneses, as it is illuminated in the discursive practices of the organisations, appears to relate almost exclusively to management, to professionals or technical workers and to those in the full-time workforce. This accords with a recent analysis of training statistics that showed these groups as receiving a disproportionately large amount of training under the NTRA (Wallace, 2000).

In addition, the discourse of geneses appears to be minimally applicable to the enterprises studied here. The subject position of the functionally 'flexible worker', which this NTRA discourse alludes to, is not in evidence among the subject positions offered to the women in this study. The women subjects produced in the organisations through current management and training practice are generally not functionally flexible but are still enclosed in a relatively narrow range of tasks; for women in two of the organisations their numerical flexibility as 'casuals' is a deciding factor in their receiving little recognised training.

The NTRA also assumes a subject position in workers predicated on concepts of 'mobility'. This discourse encompasses and supports practices such as accredited, transferable training and qualifications. Management in my study assumes that the workforce, especially the female workforce, is static because of lack of job opportunities in a regional area, because of family commitments or lack of ability or ambition and thus assigns a subjectivity to them based around passivity. Thus transferability of skills and qualifications for these women is seen as irrelevant in the organisations as the discourse of mobility is inapplicable to these women.

In summary, I have shown how women have become 'known' in training policy and through certain workplace training practices. I have demonstrated that the NTRA discourses of flexibility, mobility and inclusiveness have obscured the workplace training context of women. Furthermore, I have shown how certain discursive practices operating in two organisations have assigned subsidiary subject positions to women thus limiting their access to training in the organisations. In both cases this knowledge has kept women 'in their place', excluded from many training opportunities.

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Introduction

Education in the developed world is changing rapidly. The factors driving that change include the Internet-based technologies which make information available, facilitate online dialogue between individuals, allow the formation of virtual communities of interest and make learning resources available online. At the same time, a new consensus on lifelong learning is emerging which warns us all to anticipate several career transitions during our lives and stresses the growing importance of education and training. In the ever-increasing pace of post-industrial society we need to engage in learning continuously.

As learning becomes more important and makes increasing demands on time and money, we need to find ways for as much learning as possible to occur on the job and in all other aspects of a learner's life (Viall 1996 p.76). The differences between 'typical' learning in a traditional educational institution and learning in the workplace are legion but we will focus on physical proximity, relevance, certification and degree of formality. To begin, we need to outline some of the work of Ivan Illich, from whom we have drawn the concept of *deschooling*. Much of our exposition of his ideas, particularly next section of this paper, follows Illich's original text.

Illich's Deschooling Society

The opening of this paper identifies some of the factors driving change in education. These include online information, dialogue, communities and learning resources. As components of a new learning environment, they seem closely related to the resources specified by radical education reformers working and writing in the late 1960s and 1970s. Their opposition to compulsory schooling was based on a cogent critique but their proposals for change were stillborn. The most famous (or infamous) of these prophets of radical change is Ivan Illich and we will be drawing on ideas from his book *Deschooling Society* (1971). In this section, we present an outline of his ideas and in the next, we argue that the Internet can provide all the facilities he thought necessary to supplant institutionalised education. In 1970, Illich thought that the deschooling revolution was inevitable and imminent. We believe that deschooling will take the form of a more pluralistic, more global pattern of educational activity in which the Internet is an important medium. Vocational education and training will be profoundly changed. The deschooling revolution will be slow and partial but we believe that its time has come.

Illich is not against education but portrays formal educational institutions as authoritarian and poorly suited for their educational mission. In particular, he is critical of the kind of institution which combines compulsion, certification and education. In *Deschooling Society*, he recognised an urgent need for research on the possible use of technology to create new educational institutions which serve personal, creative and autonomous interaction. His argument begins by considering equality in education and he quickly concludes that realistic compensatory education for the children of poor families in the United States would be unrealistically expensive. Equal obligatory schooling must, he argues, be recognised as at least economically unfeasible. He also doubts the educational value of compulsory schooling, arguing that the mere existence of school discourages and disables the poor from taking control of their own learning. Schools are not purely educational institutions and Illich lists their main roles as custodial care, selection, indoctrination, and learning. He suggests an alternative approach to learning: that what is needed are new networks, readily available to the public and designed to spread equal opportunity for learning and teaching. These new networks would be more informal and congenial than the schools, colleges and universities which dominate education, hence the term *deschooling*.

In the remainder of this section, we outline Illich's *learning webs* which, he believed, are a sufficient replacement for formal educational institutions. Illich identifies no more than four distinct "channels" which could contain all the resources needed for real learning. They are:

1. things
2. people - who serve as models for skills and values
3. peers who challenge, argue, compete, cooperate, and understand
4. an experienced 'elder' who really cares and expose the learner to confrontation or criticism

Things like machines, animals or events such as meetings are often vitally important for learning. Someone learning to maintain equipment, for example, or to minute a meeting needs good access to examples. Things and events are often readily available to learners outside formal educational institutions, not least in their place of work. If necessary, some can be reserved for educational purposes, stored in libraries, rental agencies, laboratories, and places like museums.

Illich proposes a *skill exchange* which permits **people who can serve as models for skills and values** to list their skills, the conditions under which they are willing to serve as models for others who want to learn these skills and how they can be reached.

For Illich, **peers who challenge, argue, compete, cooperate, and understand** can be identified through peer matching, establishing a communications network which permits persons to describe the learning activity in which they wish to engage, in the hope of finding a partner for the inquiry. He suggests that in a large city someone could identify themselves to a computer listing an address and telephone number, indicating a book, article, film, or recording on which that person seeks a partner for discussion. Within days, a list of others who recently had taken the same initiative could be mailed. This list would be used to arrange a meeting with persons who initially would be known exclusively by the fact that they requested a dialogue about the same subject.

At times, Illich doubts whether what he calls **an experienced 'elder'** is really needed. What he proposes, though, is a *reference service* to educators-at-large, who can be listed in a directory giving the addresses and self-descriptions of professionals, paraprofessionals, and free-lancers - along with conditions of access to their services. They could be selected by individual learners by polling or consulting their former clients.

An aspect of vocational learning which Illich stresses is the importance of drill and practice, arguing that the student who is faced with the task of acquiring a new skill may benefit greatly from the discipline associated with the old-fashioned schoolmaster who taught reading, Hebrew, catechism, or multiplication by rote.

Illich envisages that matching services, storehouses for learning objects and the fees of educators-at-large will be funded by the State through an educational passport or an 'edu-credit card' provided to each citizen at birth. Savings to the State would come from reduced funding of formal institutions.

For many professional educators, particularly those in traditional institutions, these proposals raise immediate concerns about assessment and certification. How will employers, say, know enough about performance at school, college or university to make reasonable recruitment decisions? Illich's answer is that the coupling of learning and certification is inherently problematic, a kind of contamination of the process of education. In any case, what an individual knows, understands and can do is important for employment or further study but how they developed these abilities is irrelevant. He argues that we need a law forbidding discrimination in hiring, voting, or admission to centres of learning based on previous attendance on some specific course or courses. A law of this sort might not stop the award of formal certificates but some of the uses to which certification is now put would become illegal.

Finding the resources needed for real learning

Illich's assumption is that *skill exchanges* which identify people willing to serve as models for skills will lead to face to face meetings. The same can be said of *peer matching* to identify fellow learners and *reference services* to 'elders'. Even *things*, if they are specially housed for educational purposes, could be accessed by anyone with knowledge of availability. Writing in the 1960s, he makes specific reference to computer technology and it is probably unnecessary for the authors of this paper to point out the suitability of computer databases for the kind of matching that he proposes. The fact that he calls one of the chapters of his book 'Learning Webs' seems prophetic and, when read by post-Internet readers, highlights the suitability of the Internet for providing free public access to information of this kind. One site of this sort is The Education Exchange (<http://brainpower.iscool.net/>) offering 'a gateway' to free educational information and instruction.

The site includes a searchable course database that puts students in touch with available resources. It is funded through its association with the online retailer Amazon (<http://www.amazon.com/>). Internet services can perform the matching functions which, according to Illich, are all that is needed for real learning. But the use of freely accessible databases represents only part of the potential of the Internet to support learning. It can also support high quality distance education, which maintains proximity between the learner and their workplace, home, and human support.

Proximity

Perhaps it is because of Illich's emphasis on lifelong learning outside formal institutions - and vocational learning in particular - that he does not write much about the need for learning resources like books, handouts and worksheets that are vitally important for some courses in traditional institutions. Some learners, of course, dislike the structures and limitations of schooling but some seem most comfortable in a highly structured learning environment. For those seeking a structured experience or seeking certification, online learning offers the potential to bring a course into the workplace itself. Work-based learning usually means greater physical distance between the learner and learning resources, peers and lecturers/teachers. Before the advent of online technologies, this gap was bridged mainly by mail and telephone but online technologies are faster, cheaper, flexible and more responsive.

Online technologies will also support informal learning by people who want to enrich their lives or advance their capabilities without attaching themselves to any formal programme of learning or institution and without regard to certification. The growth of informal learning in the workplace will be relatively difficult to measure but we believe that it has a central part to play. In this mode the time, location and content of vocational education is chosen by the learner, often in response to a specific problem. Learning is prompted by challenges at work rather than taken up for its own sake. Faced with immediate challenges or problems, people are motivated to find time to acquire the new knowledge, skills, or attitudes they need. In this context, the cost of internet access and course fees are important factors.

Informal learners will have restricted access to educational resources. Some resources are products available at a price; others are available only to those registered on a formal programme of study. Informal learning benefits from the availability of learning materials which are easy to find and free to users. Just as public libraries in the 19th and 20th Centuries did a great deal to bring literature, information and learning resources into the lives of the poor of the developed countries online resources which are freely available need to become better and more diverse. Globewide Network Academy (<http://www.gnacademy.org/>), for example, sets out to promote access to educational opportunities for anybody, anywhere. Their tools are open-source, and can be used and copied without charge.

The importance of proximity can be highlighted by the difficulty and expense of running certain kinds of technical courses in the TAFE sector. In disciplines like Engineering, Computing or Design, TAFE institutions duplicate equipment commonly found in the workplace in their own buildings. In some other courses, learners make do with theoretical input illustrated by photographs or diagrams of the real thing. Online resources can improve on this unsatisfactory approach with animation and simulation but supporting learning outside the confines of a formal institution is a much more important function.

Few educators would dismiss the importance of the workplace as a learning resource, perhaps citing additional advantages such as an increased chance of skill transfer into the working environment and improved retention when new knowledge and skill is put to immediate use. Examples of workplace learning supported online are not easily found and it is consequently very difficult to form an overview of their effectiveness but the importance to trainees and employers of vocational learning in the workplace is relatively well documented. As an example, a study of open learning in small firms in the UK by Hilary Temple (1995) found that open learning was seen by some employers as the only viable option for staff training because they did not feel they could release staff for courses. In many workplaces, employers are willing to release an employee for training while they are unoccupied but often there seems to be no pattern to downtime - which makes it difficult for employers to commit to education and training. In some workplaces, employees could use downtime for education and training if they could also be available to begin work immediately, for example when a customer comes into a shop or a big delivery arrives. A survey by the American Society for Training and Development (<http://www.astd.org/>) in 1998 illustrates the trend towards using electronic media. Computer based training was used by 66% of 'leading edge' companies, with 44% using CD-ROM, 53% using videoconferencing and 31% other multimedia.

Dialogue

Online learning is different enough from, say, a mid-20th Century correspondence course to constitute a qualitative change. At the core of this, we believe, is its capacity for *dialogue*. Some media are essentially broadcast media, allowing one way communication only. TV and radio, a printed book, a lecture, or a speech are all broadcast media. The telephone and the seminar are examples of media that support dialogue. In education, the lecture is a broadcast, the seminar a dialogue. The lecture is *delivered*, the seminar is *facilitated*. For educational purposes, the most important feature of the Internet, particularly the World Wide Web, is that it is dialogical. (It can, of course, also be used to broadcast.)

Dialogue is a horizontal relationship in which one individual is *with* the other. In Freire's words (1974), it is positive, hopeful, trusting and critical. It involves two-way communication. Broadcast is a vertical relationship in which one person is higher than the other. To borrow Friere's words again, it is loveless, arrogant, hopeless, mistrustful, acritical. Broadcast does not communicate but issues communiques; information passes in one direction.

The Internet has the potential to support a variety of different kinds of dialogue. At its most basic level, a form of automated dialogue takes place when someone browses the World Wide Web. A two-way signal allows the user to transform their virtual environment as they follow links. In this mode, the Web can be used as a source of information. The Internet also allows dialogue between people through email, chat rooms, online notice boards, mail bases and so on. This dialogue can be synchronous or there can be a delay between responses - but comments and responses can be viewed online as a coherent and informed conversation between real people who can also be contacted by email.

Like courses in a conventional school or university, a lot of this dialogue will be between learners (see, for example, Gibson & Rutherford (1998)) but there is a place for teaching too. Online tutors provide importance guidance for the learners. They give feedback on the ongoing discussion and steer the thread of conversation ensuring that key points can be explored. A particularly important feature of many courses is the development of trust between the learners and the formation of an online learning community (Palloff & Pratt 1999). Tutors play a key role in this process and are often pivotal to the success of the course. Developments in online assessment will lead to assessment tools which learners can use formatively to provide them with information about their own learning.

Assessment and certification

Illich argues that we need new laws forbidding discrimination in hiring, voting, or academic admissions based on attendance on some specific course or courses. If this suggestion seems too radical, we should remember that many employers already use a selection process of their own design and pay scant attention to formal qualifications. Where employers do require formal qualifications, the link between qualification and job content is sometimes questionable. Some higher education institutions like the UK's Open University accept students without the usual academic prerequisites. There are some areas of professional employment, medical surgery for example, where the developed countries would find it difficult to do without certification altogether, but the potential for an overall shift away from selection based on formal certificates seems possible, even desirable. One option worth exploring is selection based on a portfolio of work built up by learners over a period of years. This practice allows employers to make a reasonably close match between job specification and employee capability and can also form a basis for entry to further study. In some institutions, e.g. Art schools, this practice is well established. Another option for informal learners is to study for a General Equivalency Diploma or its equivalent outside the US. Authors like Bennett (1998) and Owston (1997) predict that electronic distance examinations will play a key role in this development.

New educational structures

A wide variety of new educational projects and enterprises are developing in response to the factors driving educational change (Whittington and Sclater, 1998). These new structures range from clearing houses listing distance learning courses and resources offered by more than one institution to full scale new institutions delivering their own fully accredited degree courses. Many of these new institutions are developing new models for delivering courses that better suit lifelong learners and a curriculum that specifically targets early or mid career professionals.

Vocational education and training is a vast enterprise involving huge amounts of time and money. In the main, training is currently supported by a patchwork of small providers. In the UK, the market for non-government training providers was worth an estimated £16bn in 1998 (Baxter 1998). A local study in

Manchester, England (Jarvis 1998) found that training was not confined to a few companies. Almost all the firms surveyed had provided some form of training during the preceding two years and most had a definite training plan.

Acceptance of electronic media opens the way for penetration of the global training market by multinational companies. In some cases, courses will be generated in-house. In 1995, the *Multimedia Training Newsletter* reported that Price Waterhouse's multimedia training programme had been used by 7,000 learners in 50 countries, reducing the time needed for learners to attain the same standard of knowledge by 50% at the same time as reducing training costs from US\$760 per learner to only \$106 for the multimedia training. There are a relatively small number of international players in online education such as Regents College in New York (<http://www.regents.edu/>) and UNITAR in South East Asia (<http://www.unitar.edu.my/>). But many traditional universities and colleges are offering or developing online courses, often on a for-profit basis in partnership with commercial providers. Courses in vocational education and training are available from a rapidly growing range of commercial organisations, some of whom already have a substantial share of the global electronic communication market.

Some State-sponsored provision seems to be embracing change, for example the Pennsylvania Department of Education (USA) which is investing approximately US\$10 million, over two years, to create Digital School Districts and states that "the ultimate goal of education needs to shift from receiving a diploma to life-long learning" (<http://l2l.org/digitalsd/>). The same department sponsors Pennsylvania's Distance Learning Exchange (<http://dle.state.pa.us/>), a web-based clearing house of distance learning and Internet opportunities.

One of the changes which seems sure to proceed is a weakening in the importance of local providers - often TAFE institutions, community colleges or universities who offer educational services to a well defined and reasonably secure local 'patch'. Instead, the emergence of in-house training, national and international providers will weaken this pattern of provision. Online technologies will become an increasingly important source of support for learning in the workplace. Some of this learning will be certified, some will not. Some courses will be provided by the employer, some by existing providers, some by new online providers. Some providers will offer high quality training materials in a bid for profit, some will support relatively short and highly focused episodes of informal learning. An example of an online resource which seeks to support a community of learners is LUVIT (www.luvit.com) which advertises itself as a global community for educators, learners and other users interested in e-learning and a global marketplace for the trade of knowledge and education material online. An extraordinary diversity of new educational structures is emerging and one way to understand their impact is to return Illich's ideas on deschooling.

Deschooling

Illich believed that the system of compulsory schooling was unsustainable and he turned out to be mistaken, at least in the medium term. A much less radical vision of the future seems to be emerging, in which alternatives to learning in formal institutions are increasingly attractive and varied - and the formal institutions themselves are weakened as a result. Schools, colleges and universities are not uniformly popular places in which the learning experience is a comfortable one for everyone. Illich nicely identifies the flaw in most formal institutions; that a mix of compulsion, indoctrination, certification and education is responsible for an atmosphere which is, at least for some, uncomfortably authoritarian. As for adult learners, many simply do not want to go 'back to school' and a lot of vocational education and training is deliberately designed to avoid reminders of the adult learners' school days.

New opportunities for lifelong learning, particularly vocational learning, will weaken the motivation to provide universal and compulsory basic education throughout childhood and into adolescence. Some professional educators, particularly in schools, will resist change. Others, probably including those who have tired of force feeding 'education' to reluctant teenagers, will welcome it. There is room for scepticism about how important pedagogical debates about the merits of online learning will turn out to be. In academic circles, the efficacy of online learning or even pre-Internet computer assisted learning is disputed. This is nicely illustrated by Russel's (1999) research bibliography on technology for distance education which documents the "No Significant Difference Phenomenon". But online learning is being driven forward by motives like ambition and faith in the future. If sound pedagogic reasons for adopting it are absent, this could turn out to be an ironic but minor detail in the history of education. Powerful self-interest groups are already involved in these changes. Political and financial considerations may prove to be more influential in the development of online learning and deschooling than well considered social policy. Important changes have begun.

Online learning is already an important feature of higher education and the TAFE sector is introducing online courses in many countries. These developments tend to take students away from existing courses and formal

institutions. In itself, this may not lead to attrition in those institutions. If predictions about lifelong learning are correct, online learning will grow in an expanding education sector and many traditional institutions could be unscathed. Online learning itself will contribute to growth in educational activity, playing the dual role of stimulating and satisfying demand. The overall picture, however, will include a greater variety of learning opportunities with some casualties among the existing institutions.

Changes in the higher education and TAFE sectors are unlikely to extend to primary/elementary schools and may have a limited impact on High Schools. It is too early to anticipate the lowering of the school leaving age in the developed world and there is little evidence of real political will to replace primary/elementary schools with new online options. What seems clear, however, is that the cosy international consensus that there should be compulsory institutionalised education for children and teenagers will be challenged. This challenge will not come solely as a consequence of the increased vigour of vocational education and training. In many countries (Scotland is an example) Further Education (TAFE) institutions are already offering a more informal and congenial environment to young people in compulsory schooling. The burgeoning home schooling movement in North America (<http://www.home-school.com/>) challenges the prerogative of the State to be sole providers of education for children and young people and is already making extensive use of the Internet as a source of contacts and resources. The availability of testing for a General Equivalency Diploma or its counterpart outside the US will be a comfort to learners who prefer to learn in an informal setting.

Conclusion

Online learning technology is developing rapidly in response to the technological opportunity offered by the Internet, a drive towards better quality and cost effectiveness in education and the intervention of commercial interests. The relationship between the increased popularity of online learning as an activity and the technical development of the technologies which support it seems symbiotic and it is reasonable to anticipate accelerating growth. These changes will not happen in isolation; we anticipate a substantial challenge to formal educational institutions and the emergence of more global and pluralistic educational opportunities.

The emergence of new educational technologies offer an opportunity for us to rethink the shape and purpose of educational provision. In this context, Illich's writing on deschooling is a helpful tool for identifying the essential elements of learning experiences and the probable consequences of a move towards online learning. Vocational education and training will benefit from technologies which support learning at any time in any place and will be enriched by the technical capacity of the new medium to support dialogue. The capacity to support learning in the workplace is likely to shift the balance in learning activity away from traditional institutions and towards new modes of vocational education and training.

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QUALITY ONLINE PARTICIPATION: LEARNING IN CMC CLASSROOMS

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Introduction

As colleagues, we began our learning journey into the world of online teaching by instructing the first two online courses in a recently developed graduate program called the Master of Continuing Education: Workplace Learning (MCE). After six years of instructing in this program, we have grown in our understanding of how adult students learn in a computer mediated conferencing (CMC) learning environment, while also working full-time. This experience has challenged us in many ways to examine our own learning and knowledge about what constitutes quality participation generally, and in online classroom environments in particular.

Adult students are increasingly returning to part-time studies through non-traditional programs that utilize a CMC approach. When not familiar with CMC, both instructors and students sometimes struggle with finding their 'voices' online, a struggle that can hamper their subsequent learning within a 'virtual' classroom. How can instructors foster students' quality participation and subsequent learning? What are the cultural differences in student needs? Gender can be seen as one of the important aspects of cultural differences in communication (Tannen, 1990; Simons, 1989). Gender differences in communication in traditional face-to-face (F2F) classrooms and the disparity of treatment by teachers between females and males has been well documented (Sadker & Sadker, 1994; Spender, 1995). Inquiring into gender, and other cultural learner differences in CMC environments is important to understanding and fostering quality participation. In this paper, we explore our teaching/learning experiences in the MCE graduate program based in Alberta, Canada that is primarily taught online to adult students across Canada and Southeast Asia. Our goal is to describe what we have learned about facilitating our students' learning within this online environment.

Background to the MCE Program

The overall goal of the MCE is to produce graduates who have a broad and critical perspective of the field of "workplace learning and leadership," and an appreciation of the linkages between theory and practice, a range of intervention skills that they can bring to organizations as workplace learning specialists, and an understanding of themselves and others as individual, team, and organizational learners.

A key design feature to the MCE is the selection of students into a cohort or self-contained group of 24 members at the beginning of their program. These cohort groups stay together in the institute and core CMC courses, but take their elective CMC courses with the larger community of MCE students, as well as graduate students from other programs. Overall, the instructional approach is designed to: move the students from an individual to an organizational context; have students examine their own personal perspective as drawn from their experience, in conjunction to that of the experts on each topic; and to have them articulate and apply their evolving "theory-of-practice" within their own workplace setting.

Defining quality participation in the CMC environment

To define quality participation in the CMC environment it is helpful to examine how quality participation in an online environment is similar or different from that in traditional F2F environments, and to explore how we enhance participation in F2F environments.

Participation in F2F programs has been well documented and defined in terms of both quantity and quality. Quantity can be measured by counting the number of verbal contributions made by each student, while defining quality participation requires an analysis of these verbal (and sometimes nonverbal) contributions: students speak less often than teachers initiate more interaction; a few students typically do most of the talking; and faculty rarely ask questions that make students think. (see *The Teaching Professor* Weimer, 1996 for a complete summary of what the research says about student participation in traditional classrooms).

We have no reason to believe that the situation online is significantly better in most CMC classrooms that have merely adopted the technology without carefully analyzing their teaching approach. Because 'online' classrooms are a relatively recent phenomena, research defining quality participation in the online environment is sparse. In our efforts to examine this issue we have found Hall's (1995) criteria on how to evaluate electronic and F2F discussions a helpful starting point. Hall emphasizes the importance of the ability to express and synthesize ideas, posting regularly and creating a supportive environment (see Hall,

1995 for more detailed accounts). Wells (1994) criteria for grading graduate level student participation in CMC classrooms has taken Hall's a step further by noting the importance of logic, insight, referencing of others comments both acknowledgment and disagreement in appropriate manner without 'flaming' or sexist/racist remarks (see Wells, 1994 for a more detailed account).

We also found our understanding of quality participation and ability to enhance it expanding as we read about the similar experiences and challenges faced by other beginning online teachers, dialogued with colleagues across North America, and listened to what our students said about their online experiences.

Learning from our students about their experiences and values

We learned experientially along the way from our students about what we could do in our role as teachers to increase the quality of their participation in our online classrooms. In the early weeks of their first CMC courses, students told us that they often felt lonely or isolated, out of touch with classmates, overwhelmed by the amount of self direction required, and the volume of reading required. As time progressed in this first, and subsequent CMC courses, students also disclosed to us what helped them to feel comfortable and more engaged as an online learner. They gained confidence hearing others express similar anxieties about their ability to learn online. Their comfort level increased when they shared thoughts and concerns with each other and when the instructor encouraged and supported them with private messages, as well as with public postings acknowledging the difficulty of shifting from F2F to online learning, from both a student learning and teacher instructional perspective. Students indicated that such messages told them that we were "not alone" and also expressed the sheer joy they felt in belonging to a cohort group that encouraged the joint exploration of their thoughts and feelings. Students noted that learning to cite others work and ideas, being responsible for leading or summarizing a topic discussion, the modeling of responses provided by the instructor and other students, and simply more online experience, altogether increased their overall level of comfort, helping them to feel more engaged in the learning process.

As students progressed in their CMC courses, it became important for them to learn to discipline themselves to a consistent schedule of reading and study time. As well, many noted that they became increasingly able to schedule quiet time to reflect and write about their learning in private journals. After the fact, they also realized the value of meeting and establishing personal relationships in the F2F institute. Over time, they began to value both the F2F and CMC components of the program, as they experienced an increased sense of freedom to think, challenge, share perspectives, and grow committed to their cohort group. By the end of the program, most students were fairly consistent in their view of what was gained and lost in the on-line experience, e.g. how to compensate for differences between F2F and CMC interactions. In the absence of F2F contact, they had to struggle to maintain conversational flow, as well as follow mixed threads of conversations. They were often concerned about finding ways to ensure air time for all, by balancing verbosity with brevity. They often felt that they learned more 'deeply' and 'broadly' because the text-based format allowed them to review past conversations and draw conceptual linkages not always as visible in F2F conversations. As they spent more time online, they began to appreciate how speaking and writing were quite different processes. They gained an appreciation for learning online through metaphor, as well as imagery. Overall, students indicated that their ability to review and organize ideas, and to self-direct their own learning had increased in the online environment. They discovered they could ask for feedback, initiate conversations and engage in dialogue during times and in ways that suited them, as opposed to the teacher or institution. In summary then, our conceptualization of how quality participation is enhanced online, as well as what it looks online has evolved from this valuable student feedback, in addition to our own lived experiences.

Conceptualizing our experience

On-going dialogue with each other as instructors and with our students in formal and informal conversations, as well as formative and summative evaluation feedback, experientially based articles from other online educators, all assisted us in understanding and analyzing the concept of 'quality online participation'. As we searched for a framework to organize our learnings, we discovered Berge's (1995), four roles for the facilitator of on-line learning:

1. pedagogical – (intellectual) educational facilitator who questions and probes for students responses that focus discussions on critical concepts, principles, and skills.
2. social – (affective) promotes human relationships, develops group cohesiveness, maintains the group as a unit and helps students work together.
3. managerial - (organizational) sets the agenda for discussion: the objectives, timetable, procedural rules, decision-making norms.

4. **Technical** – (instrumental) makes students comfortable using complex technology and the software (i.e. makes the technology transparent so that everyone may concentrate on the academic task) of learning.

Of Berge's four online roles, the pedagogical, managerial and technical ones are similar to those played in the planning and delivery of traditional F2F courses. Pedagogically, the instructor acts as the students' intellectual mentor and guide, assisting them to achieve the course, as well as their own individual, learning goals. The pedagogical role online though, causes the instructor to question the concept of facilitation in terms of who questions, probes and focuses discussions on critical concepts, principles and skills. In the online environment, the effective instructor hands over many of these functions to students, who subsequently take on more active, facilitative roles. Online instructors must take a technical role by making students comfortable with any equipment being used so that they can concentrate on the learning process. In summary, although similar in process to F2F instruction, how we handle these three roles becomes more explicit and visible in the online classroom.

Berge's social role appears to be the most different from that played in traditional F2F classes. Due to the lack of non-verbal or visual social cues, the instructor must attend very carefully to the social and interpersonal dynamics of the online communication by monitoring the content and tone of textual interactions. She must work very actively to promote relationships and community, develop group cohesiveness and teamwork in order to build and foster the creation of a supportive online learning environment by being present 'behind the scenes' through the use of private messages, as well as public postings. The expert modeling of these social role behaviors allows class members to learn to take more responsibility for the online environment. These are perhaps the "new skills" and strategies most critical to becoming a successful online instructor (Cook, 1997; Dewar, 1996; Hutton, 1998, 1997; Hutton & Gougeon, 1996; Hutton, King & Melichar, 1998; Katz, Wiesenbergs & Hutton, 1997; Wiesenbergs & Hutton, 1997, 1996). While, Berge, Hall and Wells' work has helped us to enhance our teaching strategies for increasing participation online, we stress the importance of instructors developing their own 'theory-of-practice' upon which to base their teaching approach.

Our theory of practice

A significant learning outcome for us, as relatively new online instructors, has been the importance of examining our key assumptions about teaching on a continual basis, as we teach and learn together. And while we each hold some different assumptions, our current collective "theory-of-practice" contains these common themes which include the importance of having a philosophical framework grounded in the principles and practices of adult development and learning theory that incorporates experiential learning, building a community of learners and consideration for diversity issues. (See Wiesenbergs (1999) for a fuller description of one author's theory-of-practice and Hutton & Gougeon (1996 & 1999) for aspects of cross-cultural and cross gender communication).

Culture and gender issues in online communication

Cultural diversity is an issue that was most dramatically brought to our attention when we began delivering the MCE in Southeast Asia. As well, we have recently entered into another partnership agreement with an Australian University, and are actively pursuing other international agreements. The implications of diverse perspectives about the teaching/learning process, and resulting online communication patterns related to cultural differences, is an important issue for our program.

Gender as a sub set of culture (Simon, 1989) is another immediate and on-going issue in our program. The aspect of gender differences in participation of women and men online, is of increasing interest as the demographic composition of adult learners changes. In North America, the proportions of both women and members of 'minority' groups particularly in adult education opportunities, has steadily increased in recent years (Powell, 1994). Our program from its inception has attracted far more women than men

Our interest in gender discrepancies in online participation arises from our own instructional experiences and our review of related research. We know that there is a documented disparity of participation between women and men in elementary through graduate school in F2F programs (Sadker & Sadker, 1994; Orenstein, 1994; AAU Report, 1992) as well as inequitable access (Spender, 1995). Such experiences and information cause us to question whether similar disparate patterns of participation and access in F2F classrooms may continue to prevail in online classrooms. Further, discussions with other colleagues has challenged us to examine whether the text-based communication of CMC genuinely provides greater opportunities for equitable participation, and therefore if CMC instruction inherently provides a more democratic environment for women than F2F classrooms. It is our experience that this is not necessarily the case. Thus, our interest in exploring diversity of communication styles by culture in the MCE program leads us to further explore the

issue of quantity and quality of participation in the CMC environment for women and men. We are currently engaged in preliminary analysis of our text-based student communication to examine these issues (Hutton & Gougeon, 1996). We have found that traditional, inequitable communication and participation patterns play out similarly in CMC as they do in F2F classrooms.

It is important then to offer a subset of strategies to enhance textual communication for both women and men. We have found Tannen's socio-linguistic framework helpful in this regard. Central to Tannen's framework is an understanding of the concept of gender. Tannen considers gender to be generally a product of socialization as opposed to sex which she notes is generally a biological distinction. Tannen's linguistic analysis of women and men's communication patterns has resulted in a theoretical structure which simply put notes that women and men are often socialized (feminine and masculine) to have different needs; women seek connection and relationships, men seek status and independence.

In our classrooms we found that quantitatively both women and men students respond more frequently to male students' comments/postings than to women's. As well we found qualitative differences that support Tannen's framework. Female students, more than male students, created connection by using personal names almost exclusively, being appreciative, agreeing with others, using inclusive language, being suggestive when they offered an alternative idea, personally acknowledging that these are their own ideas and not judging others, using personal stories, being relational, and expressing intrinsic motivation. Male students on the other hand, more than female students, created status by using personal names only to clarify who said what, comparing their experiences as unique, creating one-up alignments, being declarative, and being judgmental.

Thus, to improve quality and equity of participation in the online environment for women and others of non-North American cultures, facilitators must be aware of the development of such inequitable patterns when designing and facilitating online courses. Specifically, the following strategies are suggested with cultural and gender differences in mind:

- at the beginning of the course, identify the needs felt by all class members, and refer to the research findings of Sadker & Sadker and Tannen re: unearth and make explicit the assumptions behind feminine and masculine behaviour.
- discuss how such differing needs can best be met in class.
- note that since the text medium in CMC is a limited mode of communication, they all must compensate for these limitations in their writings.
- ask all students to be as personal as possible/appropriate, for example, acknowledging each other's contributions and encourage them to use first names whenever appropriate.
- more purposefully challenge and explore women's comments as equally as men's comments.

Being North American, it is important for online instructors to reflect upon such strategies and to be mindful of cultural and gender in online classrooms. In doing so online instructors can ensure that the educational environment which has traditionally been designed and organized around men and masculinity (Davis, Crawford, Sebrechts, 1999) does not remain this way to the detriment of others in the online classroom.

Recommendations and conclusions

Following are a number of recommendations drawn from our insights about how to enhance quality online participation, organized according to Berge's (1995) framework for facilitating online learning and incorporating various elements of Hall and Well's work, as well as our own. To a certain extent some strategies may be equally relevant to more than one of Berge's four roles and may require adaptation for culturally diverse audiences.

Pedagogical role:

- explicitly ask students to weave together and acknowledge the intellectual and personal contributions of others (classmates and expert resources).
- require students to bring their own personal experiences into discussions and critical analyses.
- give timely and sensitive feedback on all student contributions and assignments strategically using both private and public messages.
- summarize key points on-line missed by students, to make sure that all students understand foundational concepts; do not rely solely on students to read off-line assigned materials.
- connect students to cyberspace experts and other on-line knowledge source

Social role:

- send messages to discussion leaders to acknowledge and affirm their important role.
- assist students to become self directed learners by providing them with tools to "learn how to learn."
- help students to learn to depend on self and each other for ideas, information and feedback
- bring students together F2F for an orientation to each other and the course prior to the course beginning.
- start to create a collaborative learning environment prior to delivering the course (e.g. talk to students about their individual learning goals and styles) and continue to focus on group learning goals and issues.
- develop a chatty, softer tone on-line to compensate for the lack of visual/auditory cues.
- include personal messages and use engaging, appropriate humor when possible.
- discuss how the anonymity and distance of virtual classrooms can be far more intimate than traditional classroom interactions and encourage students to reflect on how their communication shifts/changes when online.
- recognize and acknowledge 'lurkers', or those who do not participate in full class discussions; call on students who are not active contributors in private, not public, messages.
- design structured introductory activities (such as a personal story of introduction) that allow students to get to know one another in a non-threatening way, and build a sense of 'community'. Model this community and relationship building with your own personal story.
- incorporate 'chat' or 'café' conferences into each course to bring students together to informally discuss course or personal issues.

Managerial role:

- clearly structure learning goals, assignments and on-line discussions
- design private conferences for small group dialogues as some students will participate more readily in small group than in full class discussions.
- design relatively simple online assignments that are not too complex to execute online as group projects can easily become complex to coordinate
- do not contribute more than 30% (maximum) of on-line comments in the full class discussions.
- acknowledge all student contributions publically using student names and privately if 'off mark'.
- Deal with 'flaming', or inappropriate hostility/criticism, decisively and in private, while discussing the phenomena of 'flaming' in public.
- solicit feedback at various points during the course (e.g. formative feedback), as well as summative feedback in order to maximize your own learning from the experience and increase your ability to tailor the course to students' learning needs as you go.
- deal directly with students when monologues instead of dialogues occur which may be indicating frustration with their lack of connectedness to other classmates.
- incorporate threaded discussion features (such as requiring students to incorporate related comments of previous contributors into their response before making their contribution) into the course design
- address how the nonsynchronous, text-based nature of CMC can benefit less assertive/more reflective students who respond positively to the increased time to think and edit their on-line contributions
- encourage students to access to a variety of library and internet resources, even though this takes additional course/student time.
- address required commitment of time for online courses as unexpected additional time requirements can be a major source of frustration and conflict for many.
- be patient with students who do not respond promptly to messages, as you may have to wait days for responses, and do not rush in to fill every online 'silence'.
- move misplaced messages to appropriate conferences if necessary, for more coherent understanding and logical access.
- acknowledge yet end discussions that appear to have run their course, in order to allow students to move onto the next topic.
- create and maintain an inclusive and positive learning environment in a number of active ways, from structuring and re-structuring the discussions, to prompting students to participate (and finding the right balance of participation yourself), to establishing guidelines for on-line contributions, to offering strategies of dealing with "message overload" throughout the course- much of this can be done through modeling appropriate and effective behaviors

Technical role:

- make available expert technical support before (to allow the building of key technical skills beforehand), during (to deal with inevitable emergencies and continue assessing with the typically steep learning curve) and after (to allow students assistance during "off hours") the course.
- encourage students to get online and practice at least a few weeks before the course begins, especially if they have not used the technology before.
- be aware that technical difficulties or lack of quick help lines can greatly inhibit learning and acknowledge this openly by discussing it publicly before it happens.
- use complimentary distance technologies (video, audio, telephone) if needed, when possible.
- If you are not taking on the technical role, make sure that someone is assigned this supportive role and check with students on a regular basis to see that their needs are met (actually, they will let you know if any are not getting help with these and other technical issues).

In conclusion, in this paper we have described how quality participation is defined and generally achieved in traditional F2F classrooms, and how this differs online. We have described what we have learned from our students about design and delivering online courses that improve the quality of their participation. We have also described the importance of having a well-articulated 'theory of practice' to inform course design and delivery decisions, the importance of creating a 'learning community' online that recognizes cultural and gender diversity. Lastly, we have translated our learnings into a set of recommendations for enhancing learning in online environments.

As we continue teaching in the MCE program, we continue to learn from our students, colleagues, and each other. The careful examination of our past knowledge base of what works in traditional F2F environments was our starting point towards understanding what works in online environments. In the end, we have come to conceptualize the issue of enhancing quality student participation in the CMC environment primarily in terms of how teachers create learning communities that are learner-centered and collaborative. We believe that the role of instructor online is similar to the role of instructor in F2F classrooms as much of what we know works and is transferable. However, the asynchronous nature of CMC and the lack of visual cues, creates a more challenging social task for the online instructor.

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THE EMERGENCE OF NEW TYPES OF COMMUNITIES OF PRACTICE: THE FRAMING THE FUTURE CASE STUDY 1997-2000

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'Communities of practice' are groups of people informally bound together by shared expertise and passion for a joint enterprise (Wenger & Snyder, 2000). This paper identifies different types of communities of practice that emerged around Australia over the period 1997-2000, as a consequence of the national Framing the Future staff development program. The paper provides insights into the nature of these communities of practice and the positive impacts of the networks on the participants and their organisations and the vocational education and training sector.

Background

The formation of different types of communities of practice is an important benefit of the Framing the Future program, a major staff development initiative of the Australian National Training Authority (ANTA). The Framing the Future program began in the first half of 1997 and has provided funding for over 500 projects from 1997 - 2000, involving around 20,000 participants. Over this four-year period, the total budget for the 500 projects, including industry and participating organisations' contributions, is over \$21m.

This paper builds upon and extends recent research undertaken from September 1999 - March 2000, resulting in the report: *Re-framing the Future: the long-term impacts of Framing the Future* (Mitchell, 2000). *Re-framing the Future* assesses the long-term impacts of Framing the Future, from May 1997 to October 1999, although the report also indicates likely strategic impacts during the next few years. The report provides an analysis of those areas in which Framing the Future has made, or is likely to make, an impact, including impacts on vocational education and training (VET) staff development models and impacts on the National Training Framework.

Some major findings from *Re-framing the Future* (Mitchell, 2000) relevant to a study of communities of practice include the following points. Firstly, Framing the Future projects often result in the development of new forms of collaborative networks between industry and Registered Training Organisations (RTOs) and sometimes these networks reach across whole industries and States and Territories. For instance, Field (1999) found that many Framing the Future project teams were able to develop networks involving both industry and training providers:

The joint venture between two TAFE colleges was an absolute winner. Despite nearly a decade of teaching in TAFE, I have not had the opportunity to cross fertilise ideas within our field of study. It was stimulating to work with another TAFE and be exposed to other ideas.

Through the project, we met not only teachers and assessors, but each other's administrative staff, and worked through and with them.

These networks which were established covering staff from six institutes are important since for most of those involved this was the first time they had encountered each other, and the first time that they had experienced different systems.

One outcome of our project was increased communication between industry participants and their local Registered Training Organisations.

A second finding from *Re-framing the Future* (Mitchell, 2000) is that Framing the Future has not only achieved its expected impacts such as 'developing partnerships with enterprises and developing collegiality', but is now taking on the higher level challenges of:

cultural change, organisational change, pedagogical thinking. Now Framing the Future is about the new world order for TAFE and the management of cultural change has come to the fore. (Barry Peddle, Director, Illawarra Institute of Technology)

Re-framing the Future (Mitchell, 2000) concludes that, since 1997, Framing the Future has progressively become a strategic agent of systemic change, involved with complex issues such as pedagogy, organisational change and provider-industry relations. However, the contribution of the communities of practice created by Framing the Future to these systemic impacts were only alluded to indirectly in the *Re-framing* report, as the concept of communities of practice was outside of the scope of the study.

This paper re-examines the data provided in *Re-framing the Future* (Mitchell, 2000) and shows that communities of practice within the Framing the Future program facilitate the achievement of both individual

workplace learning and organizational aims, such as closer collaboration between educational organisations and industry.

Definitions and methodology

To analyse the types of communities of practice generated by Framing the Future, the authors revisited the research reported in *Re-framing the Future* (Mitchell, 2000). Research undertaken for *Re-framing the Future* (Mitchell, 2000) shows that the types of communities of practice generated by Framing the Future are variations of the generic communities of practice identified by Wenger & Snyder (2000), who define them as

groups of people informally bound together by shared expertise and passion for a joint enterprise - engineers engaged in deep-water drilling, for example, consultants who specialise in strategic marketing, or frontline managers in charge of check processing at a large commercial bank. Some communities of practice meet regularly — for lunch on Thursdays, say. Others are connected primarily by e-mail networks. A community of practice may or may not have an explicit agenda on a given week, and even if it does, it may not follow the agenda closely. Inevitably, however, people in communities of practice share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems.

Wenger & Snyder (2000) note that communities of practice are as diverse as the situations that give rise to them and that people in companies form them for a variety of reasons:

For example, when a company reorganises into a team-based structure, employees with functional expertise may create communities of practice as a way of maintaining connections with peers. Elsewhere, people may form communities in response to changes originating outside the organisation, such as the rise of e-commerce, or inside, such as new company strategies.

Wenger & Snyder (2000) also note that a community of practice can exist entirely within a business unit or stretch across divisional boundaries:

A community can even thrive with members from different companies; for example, the CEOs who makes up the Business Roundtable meet regularly to discuss relationships between business and public policy, among other things. A community can be made up of tens or even hundreds of people, but typically it has a core of participants whose passion for the topic energises the community and who provide intellectual and social leadership. Large communities are often subdivided by geographic region or by subject matter in order to encourage people to take part actively.

The current authors found that, when applied to the Framing the Future context, the Wenger & Snyder (2000) definitions match the common features of many of the 500 Framing the Future project groups operating since 1997, such as being bound by a shared experience or joint enterprise; meeting regularly, sometimes face-to-face and sometimes by email; maintaining contact with peers in other locations; responding to changes originating outside of the organisation; sometimes involving members from different companies; and involving a core of participants who provide leadership.

The current authors also found that, when applied to the Framing the Future context, the Wenger & Snyder (2000) definitions need to be refined, to capture distinctly different variations of communities of practice that have emerged within the Framing the Future program. Three of these variations are discussed below.

Factors supporting communities of practice

Before identifying the types of communities of practice emerging from Framing the Future, it is useful to consider how and why these communities evolve. Wenger & Snyder (2000) identify a range of factors supporting the formation of communities of practice that can be compared with factors supporting Framing the Future communities of practice. According to Wenger and Snyder (2000), to reach their full potential, communities of practice within organisations need to be integrated within the business and supported by the organisation, and they need senior management support, sponsors and resources:

Communities of practice are vulnerable because they lack the legitimacy – and the budgets – of established departments. To reach their full potential, then, they need to be integrated into the business and supported in specific ways.

Senior executives must be prepared to invest time and money in helping such communities reach their full potential. That means intervening when communities run up against obstacles

to their progress, such as IT systems that don't serve them, promotion systems that overlook community contributions, and reward structures that discourage collaboration. It also means linking communities to related initiatives such as a corporate university.

One way to strengthen communities of practice is to provide them with official sponsors and support teams. Such sponsors and teams do not design the communities or prescribe their activities or outcomes. Instead, they work with internal community leaders to provide resources and coordination.

Many of the above factors identified by Wenger & Snyder (2000) are similar to factors influencing the communities of practice within Framing the Future, as identified by Mitchell (2000) and Field (1999), including the integration of many Framing the Future projects with corporate strategic plans; the legitimacy provided to the Framing the Future communities of practice by a national project endorsed by ANTA; the importance of senior management support; and the value of sponsors. The following table summarises key drivers and influences over communities of practice, as identified by Wenger & Snyder (2000), and provides a comparative set of drivers and influences upon Framing the Future projects.

Table 1: Drivers behind communities of practice

Drivers behind generic communities of practice as identified by Wenger & Snyder (2000)	Drivers behind Framing the Future communities of practice as identified by Mitchell (2000) and Field (1999)
communities of practice should not be created in a vacuum	members share an imperative- implementation of the National Training Framework
existing groups with expertise need to be identified	members have identified a shared problem which is part of their 'real' work
managers need to provide the infrastructure to support the communities of practice	the project is integrated with the organisation's strategic plan
time and money need to be available	managers are committed and provide a supportive infrastructure
participants focus on problems that are directly related to their work	members are part of a legitimate, national training program
the communities can be self-generating if fostered	the project is flexible to meet individual team's needs
	members are recognised and rewarded and experience a sense of completion

The similarity in the drivers affecting Wenger & Snyder's (2000) generic communities of practice and the drivers affecting the communities of practice within Framing the Future supports the application of Wenger & Snyder's concept to Framing the Future.

Findings: three types of communities of practice

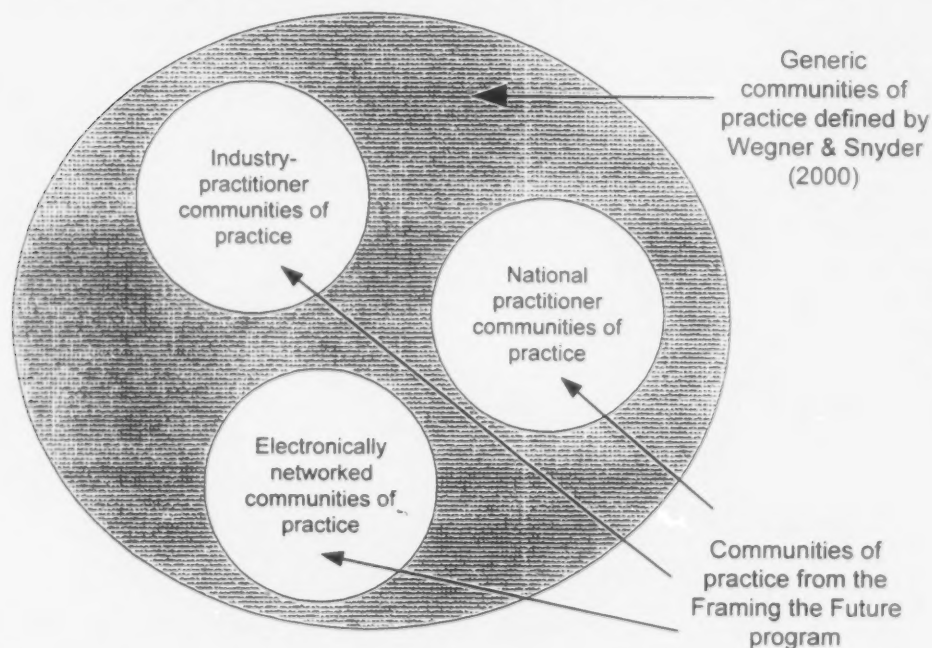
Wenger & Snyder (2000) note that people may form communities of practice in response to changes originating outside the organisation, such as the rise of e-commerce. In the case of Framing the Future, the major change outside the organisation driving the formation of communities of practice is the National Training Framework (NTF). The NTF encourages the development of new relationships between practitioners and industry, which partly explains the types of communities developing within Framing the Future. Mitchell (2000) shows that the Framing the Future program has fostered and facilitated the formation of communities of practice across organisations, whole industries and States and Territories. Three major types of communities of practice facilitated by Framing the Future and described below are summarised in Table 2. These types of communities of practice extend the generic description of communities of practice provided by Wenger & Snyder (2000).

Table 2: Definitions of communities of practice in the Framing the Future program

Types of communities of practice	Definition
industry-practitioner communities of practice	communities that include both educational practitioners and industry representatives
national practitioner communities of practice	national groups of practitioners from industry fields such as horticulture, food, or transport and distribution
networked communities of practice	groups of practitioners who use electronic communication as a means to provide coherence to their project

The following diagram shows how the above three types of communities of practice extend the generic definition provided by Wenger & Snyder (2000).

Diagram 1: Three types of communities of practice from the Framing the Future program



1. Industry-practitioner communities of practice

Re-framing the Future (Mitchell, 2000) shows that, in some instances, Framing the Future involves communities of practice that include both educational practitioners and industry representatives and that these communities impact on a whole industry in one or more State or Territory. The benefits of such 'industry-practitioner communities of practice' are described below, in relation to three exemplar industries — the light manufacturing, food and transport industries.

Re-framing the Future (Mitchell, 2000) cites Sue Woodward from the national ALMITAB, who found that companies involved in the 1998 Dry Cleaning and Laundry Framing the Future project were 'quite suspicious' initially, but the project went so well she now wants to use it as a model for the rest of the industry in Victoria on how to network between industry and RTOs. Similarly, Jennifer Gilbert from the food industry in Victoria reports that in the baking sector, the industry 'took the running' with the National Training Framework and the Framing the Future project:

A lot of the industry players became RTOs and took hold of the agenda. This year, unexpected regional strategies developed, which can be transferred across the industry. (in Mitchell, 2000)

Re-framing the Future (Mitchell, 2000) provides three reports from the one industry, the Transport and Distribution industry, that demonstrate how a Framing the Future project can have State-wide or Territory-wide and potentially national repercussions, when the industry participants network with training practitioners. For instance, Bob Mulcahy from the Tasmanian T&D ITAB reports on the State-wide impact of Framing the Future project:

There has not been a training culture in this industry, so we used Framing the Future to focus in on industry. The timing of the 1998 Framing the Future project coincided with the launch of the Training Package. Framing the Future impacted on skills recognition in the current workforce, the sharing between RTOs and the acceptance of the T&D Training Package. Before the Framing the Future project, T&D didn't have a dedicated TAFE provider; now a number of TAFE personnel are working with the industry.

Christopher Culvert from the National T&D ITAB provided a similar endorsement of the value to his industry of the networking value of Framing the Future.

From an interview with Christopher Culvert National T&D ITAB (from Mitchell, 2000)

Framing the Future gave us access to industry. It gave us the arguments and reasons for change and what benefits were in it for them. Without Framing the Future funds we wouldn't be able to have winning stories and champions that provide the momentum for change. By using action learning it made the Training Packages seem like a living document, rather than something that sits on a shelf. It made the Training Package understandable for providers, users and assessors.

Framing the Future is helping us frame our industry's future. Transport and Distribution is now looking at major advances in e-commerce, with the advent of paperless warehouses and computers on forklifts. Some of the companies in our industry are at the cutting edge of e-commerce. Our industry is now acknowledging the importance of training. We can now go with confidence to the State Training Authorities.

Judy Gallagher from Brisbane Institute of TAFE, provides this personal account of how Framing the Future networking helps her in her staff development role:

Framing the Future has a wonderful network. I went three times to the Forums, even when we didn't have a project. They open your eyes to other Institutes and private providers and Government. We needed to get out into industry. Framing the Future forced us to speak to the ITABs.

Framing the Future gave me legitimacy. It made me more willing to get out among the teachers. I had this fabulous thing called Framing the Future to talk about. (*Re-framing the Future*, Mitchell, 2000, p.31) *Re-framing the Future* (Mitchell, 2000) describes a number of other industry-practitioner networks stimulated by the Framing the Future program and the benefits they provide.

National practitioner communities of practice

Re-framing the Future (Mitchell, 2000) shows that Framing the Future has impacted upon a range of national groups of practitioners from industry fields such as horticulture, food, transport and distribution, manufacturing and child studies, encouraging the development of what can be called 'national practitioner communities of practice'.

Anthony Tyrrel from Canberra Institute of Technology reports in *Re-framing the Future* (Mitchell, 2000) that the National Horticulture TAFE Providers' Network, which had eleven different Framing the Future projects operating around Australia, decided to collaborate, to optimise the benefits of the project. Regular teleconferences were scheduled, to enable the groups to share findings about the National Training Framework. The group tackled the problem of duplicating resources and he reported that 'When you found yourself battling with an issue, you'd ring the others'. The benefits of the collaboration were significant:

As a direct result of Framing the Future, the same group then set up a national database to support the delivery of Training Packages around Australia. The database was funded by the Rural Training Council Association – the national ITAB. (Anthony Tyrrel, CIT)

In contrast to the focus on the development of communities of practice within single corporations by Wenger and Snyder (2000), *Re-framing the Future* (Mitchell, 2000) found that the Framing the Future communities of practice often had a State-wide or cross-State boundary focus, involving members from many organisations or work sites. One example of this is the Chubb Fire project which was used to bring all State-based training personnel together to implement their Enterprise Training Package across state boundaries. A Chubb Fire representative commented:

When Training Packages were first introduced, there was a lot of resistance. But now we have commitment. Each person who came onto the Training Package course now has extra money in the pay packet. The Framing the Future project focused the organisation's interest. Chubb Fire is a division of Chubb Australia, and we shared the information. Corporate training now has a Framing the Future project. We now have our Training Package firmly embedded... We now believe our bottom line is more profitable. (*Re-framing the Future*, Mitchell, 2000, p.53)

Re-framing the Future (Mitchell, 2000) cites these and other case studies of national practitioner communities of practice stimulated by the Framing the Future program, and the benefits delivered by the collaboration.

Electronically networked communities of practice

Wenger & Snyder (2000) note that 'some communities of practice meet regularly — for lunch on Thursdays, say. Others are connected primarily by e-mail networks.' Electronic communication is used extensively by Framing the Future project teams, many of which have members spread across large distances. A separate study of Framing the Future's business processes (Mitchell, 1999) shows that the national project management team of Framing the Future also models the effective use of electronic communication. In reviewing the data collected for *Re-framing the Future* (Mitchell, 2000), the authors found that a new, hybrid category of 'electronically networked communities of practice' is an appropriate theoretical framework for describing groups of practitioners who used electronic communication as a means to develop cohesion in their Framing the Future project.

Turban et al (2000) describe four types of Internet-based networked communities that have only emerged in the late 1990s, that may be useful in extending current boundaries in thinking about communities of practice.

Table 3: Types of networked communities (adapted from Turban et al, 2000, pp.442-3)

Types of networked communities	Definitions
communities of interest	In these communities, people have a chance to interact with each other on a specific topic, e.g. the Motley Fool site (www.motleyfool.com) is a very popular site for investors.
communities of relations	These communities are organised around a particular shared experience, e.g. plasticsnet.com is used by thousands of engineers in the plastics industry.
communities of fantasy	In these communities, participants create fantasies, and sometimes thousands of people can play the same game simultaneously.
communities of transactions	These communities facilitate buying and selling, e.g. www.fishmart.com acts as a fishermans' community centre.

Re-framing the Future (Mitchell, 2000) shows that the first two of these four types of networked communities — communities of interest and communities of relations — are relevant to developments in Framing the Future.

One of the benefits of using the insights provided by the commentators on electronically networked communities is that the commentators focus on the *value* of such a community. For instance, Armstrong and Hagel (in Tapscott, 1999) find that organisations that create communities that satisfy both transactional and relational needs will gain from greater customer loyalty and increased knowledge of customer needs. (p.178)

The conceptual frameworks of these different types of networked communities could also be used in conjunction with the concept of 'virtual teams' (e.g. Lipnack & Stamps, 1997) to analyse Framing the Future communities of practice. Virtual teams model some of the behaviours quoted earlier by participants in Framing the Future projects:

a virtual team works across space, time and organisational boundaries with links strengthened by webs of communication technologies. (Lipnack & Stamps, 1997)

The theoretical perspectives provided by theories about communities of practice, networked communities and virtual teams are useful descriptors of practices in many Framing the Future project teams.

Discussion

This initial research into communities of practice has extended the initial, broad definitions of Wenger & Snyder (2000). As it is important to clarify where the extensions occur, the next two tables identify how Framing the Future participants have developed new forms of communities of practice, to suit particular needs and contexts.

Wenger & Snyder (2000) identify four different types of groups — communities of practice, formal work groups, teams, and informal networks — that are useful in complementary ways. Below is a summary of their characteristics.

Table 4: Four types of groups (from Wenger & Snyder, 2000)

	What's the purpose?	Who belongs?	What holds it together?	How long does it last?
Community of practice	To develop members' capabilities; to build and exchange knowledge	Members who select themselves	Passion, commitment, and identification with the group's expertise	As long as there is interest in maintaining the group
Formal work group	To deliver a product or service	Everyone who reports to the group's manager	Job requirements and common goals	Until the next reorganisation
Project team	To accomplish a specified task	Employees assigned by senior management	The project's milestones and goals	Until the project has been completed
Informal network	To collect and pass on business information	Friends and business acquaintances	Mutual needs	As long as people have a reason to connect

The research for this paper suggests that Wenger & Snyder's (2000) category of 'communities of practice' can be further sub-divided into at least three or more sub-categories, as follows.

Table 5: Variations of communities of practice evident in Framing the Future

FRAMING THE FUTURE COMMUNITIES OF PRACTICE	What's the purpose?	Who belongs?	What holds it together?	How long does it last?
Industry-practitioner communities of practice	To develop partnerships and skills to enable the delivery and assessment of Training Packages	Representatives from industry and training provider organisations	Requirement to implement the Training Packages in a joint industry-provider approach	As long as the current issue exists
National practitioner communities of practice	To develop members' capabilities and knowledge to implement the National Training Framework	Members who feel that they have a contribution to make to their industry program in a broader context	Feeling that there are benefits to be gained from collaborating	As long as the members continue to benefit from their involvement
Networked communities of practice: eg Communities of interest; Communities of relations	To develop a union of members with common interests, common concerns or common target groups. (eg Deaf Education Network)	Representatives from a range of organisations or within one organisation who share the common interest	The need to build on and learn from others who share common interests and concerns. During times of rapid change to gain strength from the group	As long as the members are able to contribute and gain benefit from their involvement

The identification of various Framing the Future communities of practice extends the ideas of Wenger & Snyder (2000) about the nature, scope, drivers, impacts and value of communities of practice. The identification of different communities of practice within the Framing the Future program also highlights the innovative, professional work practices of professionals in VET, when challenged by the implementation of the National Training Framework.

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COLLOQUIUM PAPERS

FLEXIBILITY AT WORK: A STUDY OF EDUCATIONAL INSTITUTIONS

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Introduction

Flexibility at Work: a Study of Educational Institutions

In a review of strategic research needs in further education in the United Kingdom, Raffé (1996: 24) suggested that 'the pursuit of flexibility may provide a focus for research in the 1990s and beyond as much as the pursuit of equality provided a focus in the 1960s'. He argued that both themes direct our attention to the interfaces between education and the wider social and economic structure. Insofar as policy aims to develop a culture of lifelong learning, then institutions need to become more flexible in order that the interface is more effective and efficient. It is suggested that through enhanced flexibility, providers of learning opportunities can be more responsive to 'customers' and learners, and innovative, expanding and diversifying the range of learning opportunities available.

Any expansion and widening of participation to support lifelong learning requires greater flexibility on the part of those involved in providing learning opportunities. To enable this to happen, more flexible forms of provision are being promoted and supported. These are associated with new structures, new working practices, new curricula and new ways of organizing the curriculum – with an emphasis on the use of information technologies, modular and workplace approaches and credit accumulation and transfer. To support employability and social inclusion, inclusive forms of lifelong learning are necessary and they are predicated on greater organisational and curricula flexibility. This is to such an extent that Coffield (1999) has argued that it is less a learning society that is the goal of UK policy and more a 'flexible society'.

Flexibility and lifelong learning have become powerful discourses in the UK government's 'renewal' process. This is the case across post-school education and training provision. Here, flexibility is positioned as inherently worthwhile, enabling the widening of participation and supporting lifelong learning (Edwards 1997). Inflexibility, by contrast, is positioned as a conservative force, denying opportunity by placing the interests of the organisation and/or workforce over and above those of the learner/customer. This discourse has been deployed both in relation to providers of learning opportunities and the labour market more widely.

Further education plays a pivotal role in the government's overall strategy to develop a culture of lifelong learning. It is at the interface of education, training and employment. In supporting the development of vocational skills and qualifications, in providing non-degree higher education and providing basic skills, further education both supports access to further and higher education, but also provides opportunities for learners to extend their academic, technical, vocational and basic skills. As a sector it is central to the government's support for lifelong learning and its policy goals of competitiveness and social inclusion.

This colloquium is based on a two year empirical research project to investigate the ways in which flexibility is worked within the context of further education colleges. These institutions are positioned doubly in relation to discourses of flexibility. On the one hand, they themselves have to become more flexible organisationally, adopting the management and employment practices often associated with notions of the flexible firm and learning organisation. Here the incorporation following the 1992 Further and Higher Education Act has been critical, giving colleges the option of acting in more 'business-like' ways. On the other hand, in their role as providers of learning opportunities, they are required to provide more flexible forms of learning to service the requirements of the economy and demands for lifelong learning. This includes providing people with the skills, knowledge, understanding and qualifications to become more flexible workers and lifelong learners.

However, while organisations and those within them are subject to the discourses of flexibility, they also 'work' on and with them, in the sense of moulding them like clay. Drawing on the work on workplace literacy by Farrell (1999 and 2000), we have examined the ways in which the discourses of flexibility are worked in the workplace of further education. Farrell shows how dominant discourses of global quality management serve to undermine and impinge upon local knowledge and individual expertise. Describing workplace educators as 'discourse technologists', Farrell explains how they engage in a form of collusion that involves 'working the discourses' in order to re-articulate and hold on to local workplace values and identities. For our own research, we examine the ways in which staff and students 'work the discourses' of

flexibility when they talk about their experience of work and study in further education colleges. However, we have not necessarily drawn upon her linguistically-based approaches to analysis. The notion of working the discourses is taken metaphorically and interpretatively and is thus subject to multiple readings and possibilities.

A research approach was designed to investigate how flexibility was put to work in the context of two colleges, one in a rural setting in east England (Rural), and the other located in the inner city of a metropolitan area in southern England (Urban). The purpose is to explore how flexibility shapes the 'real world' practices of further education as these are represented in strategic plans, mission statements, college prospectuses and records of student progress, as well as in the self understandings of workers and learners. This colloquium draws upon the interview material gathered for the study. In the course of the study, between July 1999 and January 2000, fifty interviews were conducted with managers, support staff, lecturers and students. Each interview lasted about an hour and was taped and transcribed. For the purposes of this colloquium we focus on certain aspects of the data analysis to address the question: how is flexibility worked by people who are working and studying within further education?

As a group of researchers, we are approaching data analysis from different epistemological perspectives, asking what people are talking about and also asking how they both construct and are positioned by the things they say. The transcripts provide us with referential accounts from which the 'content' can be extracted and organised into topics and themes. However, we are also treating them as texts, which can be examined for the work they do in constructing subjects and objects and positioning these in particular relationships within a discourse.

Given the argument above that we are examining the working of flexibility in specific contexts, reflexively we have to recognise the workings of our research practices (Clarke, et al 2000). In the same way that participants in this study are positioned as working the discourses of flexibility, we, as researchers, are working the data, their discourses. Thus, rather than present a smooth attempt at a definitive interpretation of the data, we present a series of workings that involve us in taking extracts from the texts of those we interviewed to examine their significance in relation to the themes we identify. Thus, rather than using the data simply to illustrate an argument, we are using it also as various points of departure. As such, we are refusing the closure that is often to be found in research texts – the complete picture, the definitive interpretation, the findings, conclusions – and offering the basis for a dialogue to construct further the understanding of what is at work in further education. Given the latter is subject to contest, it would be inconsistent to somehow 'resolve' by providing an overview interpretation.

The colloquium represents four aspects of the analysis to date. They focus on: the bus(i/y)ness of learning; fuzzy boundaries around roles; good and bad flexibility; and spaces and places. It is important to signify in relation to this that in a research team of four, we have our own embedded and embodied autobiographies. This has resulted in multiple workings of the same data, with differing insights as to what it can tell us. There is no one story of this research project therefore and we are using it as a vehicle to explore some of the contemporary dilemmas of educational research as well as to illuminate and explore the multiple significance and significations of flexibility in further education.

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TRACING THE BUS(Y/I)NESS OF LEARNING IN FURTHER EDUCATION

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... carrying books rather than having them in a bag and dashing around from room to room.(Description of a 'typical member of staff' by part-time student)

Intense work

In their study of the effects of incorporation on further education colleges, following the 1992 Further and Higher Education Act in the United Kingdom, Ainley and Bailey (1997) argue that there was a shift from an ethos of public service to one of business with a variety of responses from staff and students. Senior managers, and some staff and students felt this shift, putting the student as client or customer first, represented an improvement in the services offered by the colleges. Others felt the erosion of the public service ethos represented a decline in the level of individual support to students and an increase in bureaucracy and administration through increased forms of accountability.

One of the findings of their study was the experience of an intensification of work for lecturing staff within the two case study colleges. Whatever, their relationship to the changes taking place, main grade lecturers, for instance, 'all commented on the extra work that the changes had meant for them' (Ainley and Bailey 1997: 66). This is theme to be found in much of the contemporary research on further education in the UK (Williams 1998, Yarrow and Esland 1999). In making colleges more businesslike in their organisation and practices, staff are becoming busier. Efficiency and effectiveness provide levers through which to effect change; to get much more for a little more. This involves changing work practices and patterns of employment. Avis (1999) identifies a troubling paradox between the apparently progressive models of educational practice, backed by a rhetoric of learner-centredness, relevance and transparency, with the experience of lecturers of the conditions and pedagogic context in which they work. The latter is characterised in terms of:

- loss of control;
- intensification of labour
- increase in administration;
- perceived marginalisation of teaching;
- stress on measurable performance indicators.

Thus, within the existing research on further education stories emerge around the intensification of work and its effects. Yet, to date, this has not been linked explicitly to the discourse of flexibility. Mostly, it has been examined in relation to the themes of managerialism and de-professionalisation. Drawing on the data from our study, we wish to explore the ways in which flexibility is worked into narratives of busyness in the business of further education.

Working data

Rather than representing these workings as a polished narrative with all the implied closures, we have selected a number of quotations from a number of interviews through which to explore the complexity of the bus(y/i)ness that is worked in the discourses of those within further education. The transcripts have been chosen on the basis of the roles of interviewees within the two colleges. Rather than using the data to support an argument, I am working away from it to map what arguments are being made.

i) Curriculum Managers

Barney, Rural College: I think obviously its becoming more demanding. There's more pressure on staff... Quantifiable targets too and then linking obviously performance and reward to achievement of those targets... they have these targets that they have to year after year continually achieve and then also then in future years improve upon... It's basically retaining students and getting students to achieve.

Barney identifies the staff as being under more pressure with the work becoming more demanding. He seems to be supportive of staff in identifying their situation, but has a certain distance from it, as though in managing the situation, he is not as subject to the same pressures. Indeed he talks of the setting of goals and targets as increasingly 'scientific'. In the language of business, student retention and achievement becomes the bottom line. He could be seen as distancing himself from the politics and power of this form of managing,

one based on a culture of continuous improvement through the setting of targets. The latter has been identified as integral to the quasi-markets and new public management, wherein outcomes are set, but how they are achieved rests with those involved in attaining them (Legrand and Bartlett 1993). This depersonalises the power relationships by locating the work pressure in the outcomes to be achieved. For some, this is linked to the attempt to promote new forms of institutional governance with an 'ethos of enterprise' (Rose 1998) as a challenge to what is constructed as the bureaucratic, hierarchical approaches of the 'old' public service ethos.

Barney: So long as staff are in their classrooms doing the teaching when that's been allocated to them what they actually do outside of that, how they manage their time, is their responsibility.

Barney is identifying a core of activity about which there is no flexibility, but points to the possibilities for an ethos of enterprise in his lack of interest in how staff manage their time outside that core. However, a number of points should be noted. First, his locating of the core as teaching in classrooms. This is a traditional view of what teachers do and where they do it. With the diversification of pedagogic practices and the shifting roles for teaching staff, the time outside of teaching or in teaching in ways other than in classrooms may be an increasingly important element of teaching staffs' work. In placing the responsibility for managing time for these activities on staff, he is pointing to the positive flexibility this entails, but is silent on the amounts of time that might be involved. Workload problems are identified as a time management problem of the staff involved, not an institutional issue. The targets are set, they have to be achieved and staff have to achieve them. How they are achieved is up to them. Barney's view of teaching here is somewhat ironic as he himself continues to teach – and therefore be under similar pressures to other teaching staff – but on flexi-study courses that operate in part through distance learning. The achievement of performance goals would seem to be presented as inevitable with the inevitable consequence of increased busyness. There is a functional requirement for the latter based upon achieving the former.

Melanie, Urban College: If I think about my partner's father... he was assistant education director or something and was known as a workaholic... and he every day of his working life used to come home for lunch... He used to come home, have his lunch, have a little sleep and look at the paper and then go back... And yet he wasn't thought to be skiving... he was a really... hard worker and I think people in professional jobs now, certainly people in FE at all levels, are all expected to work harder and put in more hours.

Melanie is using the artifice of contrast through which to make her point about the changing nature of work and what it means to work hard or be a 'workaholic'. The demise of a separate time and space for lunch reflect the increased demands of work – and maybe that the person who used to make the lunch may themselves be in paid work now. Interestingly, Melanie identifies this as a trend at all levels in further education and not simply focussed on the busyness of lecturers. This may reflect her own position as a curriculum manager, as in her role she will mediate between lecturing staff and senior managers and be conscious of the workloads involved. She also distinguishes between working harder and working longer hours. The two are often synonymous, but some have suggested the possibilities of working smarter, enabling more work to be done in the time available.

Melanie: ... the joke about flexible contracts is that it means teachers being ready to do anything and work all hours... if flexibility means movement and change, this college is still hierarchical and people like set roles.

Melanie identifies as a 'joke' attempts to use more flexible contracts reflecting the distance that exists within college practices and the vision for the college of more senior managers. It would appear to be precisely the sort of practices – hierarchical, role bound – against which business practices have been introduced that get in the way of that business. Melanie is also pointing to an issue in the way in which that approach to shifting the culture of the college has been taken forward. For her, promoting a business culture has been approached hierarchically, from the centre. It is embedded within the existing relations of 'us and them' and a hierarchical public service model. This means that it is far harder for change processes to take effect. For management to be more inclusive in constructing and developing the vision might invite rejection of the business ethos. Yet to locate staff as the problem to be cracked risks continuing alienation and disaffection.

ii) Cross-college Managers

Jo, Rural College: ... we all do know who's around and who we can talk to and I feel much easier with the staff who I've adopted... [the open plan office] actually stops me getting on

with sustained work... So yes, I do take work home and I quite often work later in the office when everybody's gone and you can get on.

Jo is here talking about the implication of having opted for an open office when she came into her role and 'adopted' the staff in her unit. The use of adoption is significant, with its allusion to a parenting role, but one chosen, not 'natural'. It suggests an affective dimension to her management style, the open plan office signifying her own openness, something she admits to being in her own interest as it has made her feel 'easier'. However, as with parenting, there is that concern for knowing what is going on. The open plan office thereby provides both the space for less formalised encounters, but also for increased surveillance. This is at a cost for Jo, as the comfort she feels with staff results in less 'sustained work'. She is therefore forced to work late and take work home due to the working context she has chosen. This also points to the tension between the workplace as a work environment and one of social relations. The two are to be found in all workplaces, but their nature and inter-relationship may vary. There is a sense in which Jo is positing the social relations as getting in the way of work, although beneficial. Although it might be thought that the drive towards efficiency and effectiveness is an attempt to squeeze the social dimension out of the workplace, thereby intensifying the business of work, Jo's comments point to the increased busyness engendered by trying to sustain the social in the workplace. Alternative strategies of cultivating social relations and a sense of community as a management strategy of gaining commitment to the organisation is not one to be found here. Each approach has its own stresses and tensions.

Lee, Urban College: I'd say generally by and large it (flexibility) works probably more in favour of the organisation... for example my contract states well on average you'd be working so many hours but you are expected to fulfill the duties or whatever, so in theory you could be working night and day you know.

Lee is identifying the flexibility being promoted with the college as largely working in the interests of the college. However, she does hedge this a good deal suggesting it might not be entirely clear cut. Underlying this is a tension for her in the hours allocated formally to her job and the duties to be achieved. This is resolved in favour of the latter with the consequence that she has to work longer hours than is formally allowed for. However, this remains unquantified.

Lee: I still think there is a feeling you know if people aren't seen to be working or whatever that they are slacking you know. I think there is a certain sort of pressure there... you know rumours start, its on that level really I think.

Lee is indicating the importance of visibility in the workplace, something that contribute to a culture of presenteeism and conspicuous busyness (Edwards 1997), a form of impression management by workers to ensure they are perceived to be contributing to the organisation's goals (Collinson and Collinson 1997). Once again, this is part of certain cultures of business that might have been said to be transferred into further education. It also signifies a certain low trust set of relationships in the workplace, something we might expect given indications of at least in part an us and them culture. Lee is also pointing to the informal nature of these processes of surveillance and normalisation, the sense in which people feel the pressure to conform even if there is no overt attempts to make them conform – the fear of rumour may be sufficient. The feelings of working under pressure can lead to resentments towards those who appear not to be pulling their weight and implicit or explicit measures to make them conform.

iii) Lecturing Staff

Deborah, full-time, Rural College: You have to be able to skim and skate from one area to another. And I think that is good in some ways because... you can, in theory, cover everybody's job, but the problem is we excel in different aspects at different types of work so I don't see how that works in reality.

Deborah is here pointing to the ambivalence of changing work practices. On the positive side, one is not tied to specific job roles or tasks – one can become the much espoused multi-skilled flexible worker of post-Fordist discourse (Piore and Sabel 1984). However, given that we can not excel in all areas, this is not possible 'in reality'. Two things are worthy of note. First, the idea that you can be flexible enough to cover everybody's job as a positive dimension may be questioned by some, who might see it as a form of exploitation, given the importance of job demarcation in attempts to negotiate pay and conditions. Second, Deborah locates the failure to cover as resting in the limits of individual capacity rather than in its structural desirability or undesirability. It is unrealistic rather than politically undesirable. Further it is significant that she identifies such work practices as skimming and skating, suggestive of a surface engagement with the work to be done – either hopping or gliding from one task to another – with the potential in relation to the

latter to be skating on thin ice. One might be required to do more, be busier, but whether it is done as well is another matter.

Deborah: I do not have a full timetable... The students get pushed to the end sometimes because the system's so flexible and so reactive the very purpose of our being sometimes gets forgotten or lost under paperwork. Because there is so much in the system to be processed, there is HUGE volumes of paperwork... And because of one crisis following another, people are running down the corridor going to a lesson, then the room gets moved or there isn't the right resource for teaching...

While Barney pointed to the centrality of teaching in the classroom, Deborah's comment points to an experience of teaching being overwhelmed by paperwork and the way in which her identity as a lecturer is 'forgotten' or 'lost'. This is a common view of the impact of increasing accountability demanded of organisations through inspection and audit (Power 1994). The attempts to create quasi-markets and more flexible institutions is perceived to be stifled by the demands to account for one's activities in order to demonstrate its efficiency and effectiveness. The impact of this on Deborah's sense of purpose is transferred into a notion of 'crisis'. Crisis narratives are increasingly common in public sector organisations and are deployed both to react against change but also to promote the need for greater change. For Deborah, crisis would seem to be endemic to her worklife, associated with a speeding up of activity – 'running' – and ongoing movements and confusion. The metaphors of movement in her narrative indicate a constant busyness, a certain lack of control and what she later terms a feeling of being 'threatened' by the flexibility within the college. This indicates that busyness is not simply about working practices, but also about working identities.

Ren, full-time, Urban College: ... the students are having to work hard because they are having to support themselves as well outside... Sometimes students actually fall asleep in the class because they're tired because they've been working... So for them there's a lot more pressure.

Ren is a member of staff who identifies increased work pressure and busyness as an aspect of students' lives as well as those of staff. There is a recognition that student lives have an outside to their college life and that this increasingly involves working. However, there is a sense in which a certain view of the working student is being made to operate for all students and also a view that this may be a new situation. The extent to which students do work and whether they do or do not is passed over, as is the fact that many students have always worked. The sleeping student is made to act as a powerful metaphor for the perceived increased pressure on students and their working habits. The fact that sleepiness can arise from boredom with a subject and/or be the result of leisure activities as much as work is put to one side.

Ren: I love the students but hate the organisation... We're just defending what we've got... its like putting several fingers and a foot and a toe in the dyke... So its kind of ratchet system you know you cope and then the ratchet comes on and there's more to do.

Ren is an active trade unionist, and possibly drawing on an 'us and them' stance, he depersonalises management as the organisation and locates himself in relation to this and the students – the one being a relationship of love and the other one of hate. Ren is indicating the passion of his position, but seeming to locate the students and himself outside of the organisation rather than being a part of it. He also indicates the reluctance to change identified by senior management, although in the metaphor he chooses seems apparently clear about the relative strengths of the positions – the dyke will eventually give way. Here Ren moves from his personal position to the 'we' of the trade union collective. 'We' provides a strong ground to make a claim.

Ren: (Staff are) rushing around a lot, wondering which task to prioritise, getting frustrated... (holding) sort of fragmentary conversations... muttering, mumbling to themselves.

Like others, Ren identifies the increased busyness of college life in the rushing around that people are involved in. However, there are two sides to this. First, too much work can result in rushing around and frustration at not getting things done. Second, the failure to prioritise can lead to the rushing about and frustration. There is an indication that the staff are uncertain what to prioritise, something which will contribute to the frustration they feel, when it might be a basis upon which to take control of the situation more. However, the sense Ren gives is of a situation beyond such a response. His image of staff having fragmentary conversations and muttering and mumbling speaks more of an asylum than an educational institution. It is to the madness of the current situation that Ren is pointing.

Emma, part-time, Rural College: I tend to come in and do my job and go home at the other end of the day... I guess maybe that's narrow sighted on my point in that way.

Emma's observation is interesting. There has been much debate about the significance of the use of part-time workers. On the one hand, it is seen as providing greater organisational flexibility at lower cost and is therefore exploitative. On the other hand, it is suggested many people want to work part-time. Given the busyness of full-time workers and other contextual factors, indeed part-time work can seem very attractive. Emma seems to fall into the latter category, doing her job of teaching, while not getting involved in the wider work and concerns of the institution. While she expresses a slight sense of guilt about that lack of involvement, she shows no desire to become more involved. The semi-detachment of part-time work provides an ambivalent relationship with the college and its work.

iv) Students

George, full-time, Rural College: I'm coming in extra days per week to catch up on that work that I missed.

It is not only the staff who point to increased busyness. George who started his course late, but who wishes to finish at the same time as his peer group, is making increased use of the college resources to 'catch up'. At one level, this appears as a positive dimension of flexibility. However, this does not only increase his own workload, but also increases the use of college resources with further implications, as they cannot always be relied upon. Indeed he talks of the impossibility of using college computers as they either crash or 'there's so many people in there messing about'. We are reminded of Jo's comment that she could not get on with 'sustained work' due to the interactions within her open office. George points to a similar position, whereby the social interactions around computers – 'messing about' – get in the way of his sustained work. However, it would also appear that even if there were no messing about, the computer infrastructure at the college is less than reliable, thereby pushing the resourcing of learning back onto the learners – in George's case he bought his own computer. There is a complex set of inter-plays here. Does the unreliability of resources increase the busyness of the college? Does it provide a lever for students to support their own learning more, with its associated resource implications for them and the college? Do the social relationships among students need to be marginalised in order to increase their work? Is it the business of the college to support students social relationships and development outside the curriculum? What is apparent here is the way in which George's discourses are similar to some of the staff in his articulation of his working life as a student.

Busy doing nothing...?

We have been examining the busyness of the business of learning in the attempts to develop greater flexibility in two further education colleges in the UK. The intention has not been to categorise, to compare and contrast, to look for underlying reasons and ways forward. There is no shortage of such analysis and advice in research texts. By contrast, our intention has been to explore the traces in the texts of those we interviewed, to illuminate the density and complexity of what is at play in the discourses of flexibility of those within further education settings. Far from busy doing nothing, it is clear that those in further education feel themselves and others to be increasingly busy and this is represented in their discourses. There is also the sense in which there is also a felt need on the part of staff to represent themselves as busy and engage in the impression management associated with such a stance. However, busyness is not a single nor transcendental category; it is worked up in a variety of different ways, with different assumptions and effects, which in part would seem to be related to participants roles and positions within their organisations. Thus, there are many texts of the bus(y/i)ness of learning, and they remain open to constant re-reading and re-writing. One such writing is this text, which in its own way is busy doing something. We leave it to the reader to decide what that might be.

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FLEXIBILITY AND QUESTIONS OF 'PLACE' IN FURTHER EDUCATION

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Introduction

This paper explores questions about the significance of place in relation to notions of flexibility in the context of UK further education. These questions arise from the analysis of data generated in the course of research into the meanings of flexibility for students, teachers, managers and support staff who work and study in two further education colleges in Southern England. Of course, "place" is not a theme that has simply emerged by chance from this data, since our research into notions of flexibility in further education is founded on a prior interest in the "changing places" associated with flexibility, lifelong learning and a learning society (Edwards, 1997). Current national and international policy documents for post-school education and training abound with calls for flexible forms of learning and assessment, for the development of flexible skills for work and flexible responses to rapid and unpredictable change. The question at the centre of our current research is about the diverse ways in which flexibility is constructed and played out in and through the discourses of further education. In these discourses, descriptions and definitions of flexible colleges and flexible learning programmes often claim that the processes of teaching and learning can be liberated from the constraints of time and place. In order to illuminate the question of whether such liberation, or displacement is possible or even desirable, this paper explores some of the ways in which FE colleges are constituted through spatial modes of representation as particular kinds of places.

The paper begins with a brief explanation of key ideas from recent thinking about social space in order to consider ways in which a focus on concepts of space and place might help to expand and illuminate our thinking about the meanings and effects of flexibility in further education. Firstly, we point to the association of flexibility with a historical move from modernist "spaces of enclosure" to the "limitless postponements" of postmodern "societies of control" (Deleuze, 1992). Secondly, there is a dynamic conception of a spatiality that is "... constantly in the process of being made" in the intersection of social relations and social processes (Massey, 1999). These ideas will provide reference points for a discussion of place in relation to data derived from the flexibility research.

The data gathered in the course of this research provides a rich source of spatial perspectives, including stories of physical movement through time and space, diverse accounts of the boundaries between work and home, and metaphorical and literal references to structures, layers, journeys and pathways. The focus in this paper is limited to descriptions of the two FE colleges as physical places and to an examination of spatial metaphors of containment used by staff and students when they talked about flexibility in further education. Through brief descriptions of pictorial representations of the two colleges, we contrast the ways in which some interviewees charted the places where they work and study with the careful assemblage of images in the college prospectus. Through a linguistic analysis of spatial metaphors, we go on to look at ways in which places are conceptualised inadvertently, in the language used to tell stories of experience. The paper concludes with a critical appraisal of the extent to which the spatial concepts employed in this analysis help to enhance our understanding of the discourses of flexibility in further education.

From 'spaces of enclosure' to the postmodern corporation

In his description of the "spaces of enclosure" of the factory, prison, hospital, school or family, Deleuze (1992) draws on Foucault's analysis of the disciplinary function of such spaces. These environments of enclosure serve the modernist project of the past two centuries in which the individual moves from one closed space to another – from family to school, from school to barracks or factory – and each of the spaces has its own laws and disciplinary constraints. Just as these disciplinary societies replaced earlier societies of sovereignty, Deleuze argues that since the mid-twentieth century we have entered a period of transition from disciplinary societies to "societies of control". In the disciplinary space of the modernist factory, individuals are constituted as a single body by the bosses, who control their movements, and by the unions, who organise mass resistance. The postmodern corporation, on the other hand, is more like "a gas, a spirit" which,

...constantly presents the brashest rivalry as a healthy form of emulation, an excellent motivational force that opposes individuals against one another and runs through each, dividing each within. The modulating principle of "salary according to merit" has not failed to tempt national education itself. Indeed, just as the corporation replaces the factory, perpetual training

tends to replace the school, and continuous control to replace the examination. Which is the surest way of delivering the school over to the corporation (Deleuze, 1992: 4)

In disciplinary societies, the transition between the separate spaces of enclosure is experienced, according to Deleuze, as an "apparent acquittal" although the individual is soon condemned to another period of containment in another space. In societies of control, on the other hand, there are no clear transitions since the mechanisms of control are experienced as a variety of "limitless postponements". Of course, as Deleuze points out "liberating and enslaving forces confront one another" in any regime, whatever the mechanisms of control, and argues that, "there is no need to fear or hope, but only to look for new weapons" (1992:5). This should not be read as a dichotomous view of two kinds of spaces fixed in distinct historical periods, but as a convergence of modern and postmodern spaces in what Deleuze and Guattari conceptualise as an "assemblage". Rather than treating space as immobile, or frozen, this assemblage challenges the divisions between reality, representation and subjectivity, and "...establishes connections between certain multiplicities drawn from each of these orders" (Deleuze & Guattari, 1984: 23). In this assemblage we can include Doreen Massey's conception of space-time before attempting to make connections between theory, data and subjectivity in the process of representation.

The dynamic event of space-time

Doreen Massey (1999: 269) explains how Deleuze and Guattari's view that "...a concept should express an event rather than an essence" is compatible with her own conception of time-space. This is a concept that Massey has been developing in the field of human geography out of a concern "...to understand space (and space-time) as constituted *through* the social, rather than as dimensions defining an arena *within* which the social takes place" (1999:262 Massey's emphases). This is an open conception of space which,

... is not stasis, it is not defined negatively as an absence of temporality, it is not the classic 'slice through time'. Indeed, the closed system/slice-through time imagination of space denies the possibility of a real temporality – for there is no mechanism for moving from one slice to the next... the spatiality that I envisage would be open, would be constantly in the process of being made... and would have elements of both order and accident... (Massey, 1999: 264-5).

The view of time that is required for this open and dynamic conception of space is one which is "...irreversible and the vehicle of novelty". It is a historical notion of time which, with its open view of the future, Massey contrasts with those stories of progress and development in which "... the future is already foretold" (Massey, 1999: 272). Modernist stories of progress often dissolve the spatial differences between places, regions or countries by arranging them in temporal sequences expressed in terms like *backward*, *developing* or *advanced*. From this northern hemisphere perspective, the differences between places often become nothing more than their different "place in the queue" within a single story. This fails to acknowledge that there is more than one story to tell, and Massey advocates an understanding of spatiality that acknowledges a multiplicity of possible, relatively autonomous, trajectories. Interaction and change needs multiplicity and "for multiplicity there must be space", and,

Such a space is the sphere in which distinct stories coexist, meet up, affect each other, come into conflict or cooperate. This space... is constantly, as space-time, being made" (Massey, 1999: 274).

Thus, spaces of enclosure or postmodern spaces, combined with this dynamic conception of space-time, contribute to the "assemblage" of possible significations among which we can look for connections between the various spatial perspectives which inform the following account.

Images of a place: Two further education colleges

Explaining the relationship of space to place, Massey (1994) identifies place as a particular articulation of those networks of social relations and understandings that comprise the wider space-time dimension. Massey stresses, however, that places are defined as much in relation to what is beyond them as by what is seen as 'in there', and the conception of a place is dependent on the kinds of relations that exist between the outside and the inside. With one exception, our interviews were conducted inside FE colleges and our first interview question located the college as a point of arrival since we asked people how they came to be there. This often elicited stories of literal movements and migrations which comprise a fascinating study for another paper. Later in the interviews we asked participants to draw a map or diagram of the places where they work and study. These offer perspectives that represent the diverse interests and experiences of the interviewees. One student's diagram reflects his preoccupation with the security of the bike sheds, another student drew the furniture in the bedroom where she studies at home. A part-time sign language tutor drew a detailed plan of

a single classroom, while a full-time lecturer drew a series of clouds and circles to represent various social and professional groupings both within and outside the college. A senior manager charted the time it takes him to walk between different college sites and between his office and home. Many of the staff and students drew a space where they used a computer at home, and this was often accompanied by talk about problems of sharing computers in crowded staff rooms or libraries. None of these representations bore much resemblance to the official view of each college, represented in the photographs included in the prospectus of full-time courses for the year during which the interviews were conducted.

When we decided to focus on two colleges for our empirical enquiry, we looked for diversity rather than for characteristics from which to generalise, since every further education college in the UK is unique in its history and geographical location. We chose two colleges which we distinguished by designating one *Urban* and the other *Rural*. The front cover of the *Rural College* prospectus is laid out with 16 black and white photographs arranged in a box shape around the name of the college. The layout positions the reader on the outside of 16 windows looking in at individual and group portraits of young men and women, including some ethnic diversity but suggesting the traditional FE age group of around 16 to 19. Some of the students are engaged in various activities, and the emphasis on student presence and activity is explicit in the slogan, "Develop yourself", repeated 3 times on the front cover and twice on the back of this prospectus. Vocational activities are signified by students wearing hard hats or a chef's cap and overalls, a young man is holding a spanner and a young woman wields a can of hairspray. Artistic expression is represented by a sculpture or collage and an aerial shot of an art studio. Among these images are a photograph of rows of empty study booths in a library and two exterior views of buildings in which sharp lines of concrete and glass are partially obscured by trees in full leaf. On the back cover a local map shows the college in relation to the shopping centre, railway station, harbour, parks and the town football club. Inside, the same photographs appear larger, and in colour, and there is also a picture postcard style image of yachts in the harbour.

The two prospectuses are remarkably similar. Although there are fewer photographs on the front of the *Urban College* prospectus, these are in full colour and they also are laid out geometrically as a series of windows into the college. Again there are representations of ethnic diversity and an even gender mix, but the students in these photographs span a wider age range. Only one photograph suggests vocational training and the library and computer stations, unlike the empty places represented in the *Rural College* images, are full of people. A classroom scene features the intimacy of a female teacher leaning over a male student's paper. The photograph of a building included among these frames comprises a night-time shot of lighted windows and a concrete façade with floodlights illuminating the college name and logo. Again the location map features railway stations, and the local football stadium is represented in one of the photographs inside. Other picture postcard images include a famous skyline, street market scenes and other cultural sites.

These images have been carefully assembled to represent vibrant, modern places in interesting and attractive locations, teeming with active, accomplished and smiling people. The people framed in these "windows" are enclosed in a place that stands firmly in a marked location which the reader is invited to occupy. Although there may be a sense of people moving between places within the college environment, these places are fixed within a clearly delineated institutional boundary. This seems a far cry from Deleuze's view of the postmodern corporation as "a gas, a spirit", as are many of the following representations of place constructed through the use of metaphor to describe events and relationships that happen in, and in relation to experiences of further education.

Metaphors of containment: The inside story

Metaphors are used in everyday language to represent one kind of experience in terms of another. Looking at the relationship that is established between the two ideas can illuminate meanings in the particular context of use, and also the cultural assumptions on which this relationship depends (Deshler, 1990). Writing from what they describe as an "experientialist approach" to language and meaning, Lakoff and Johnson (1980) show how language and thought are organised in metaphorical terms that are grounded in physical and cultural experience. For example, the association of UP with good, better, more, happy and DOWN with bad, worse, less or sad is part of a coherent system within the English language that can be related to a culturally specific orientation to the physical world. Since our focus will be on metaphors of containment, it is important to note the omission from Lakoff and Johnson's account of the gender specific orientation of spatial metaphors. Our argument here is based not simply on the sexual differences between male and female bodies, but on the feminist critique of Western rationality, which points out how (masculine) reason is defined by exclusion of the (feminine) body. We therefore want to stress that, when Lakoff and Johnson write about "our" experience, they assume that "we" all have the same (masculine) bodies. For example, writing about metaphors of containment,

We experience ourselves as entities, separate from the world – as containers with an inside and an outside. We also experience things external to us as entities – often also as containers with insides and outsides (1980:58)

The inside/outside binary is one that has been much debated in feminist and postmodern literature on the body and the self, (Irigary, 1985; Bartky, 1992; Probyn, 1993; Grosz, 1995). It is also one that is interesting to examine in relation to flexibility, while always recognising, "...the sexually particular positions from which knowledges emanate and by which they are interpreted and used" (Grosz, 1995:43).

Here we begin our discussion of inside/ outside metaphors by acknowledging the way in which both the physical location and the opening questions of our interviews establish a perspective from the "inside". However, when Simone, talks about going "back into education again", she recalls her position on the *outside*. Simone left school when she was fourteen and had her first child at the age of 17. While bringing up her son, Simone had a number of "little mundane jobs" like "bar work, stacking shelves, you know, cleaning...". She said that she had "put education on the back burner" until,

Four years ago I had my second child
and I thought to myself, right,
what do I want to do?
Do I want to keep doing these, like, little jobs
that are getting nowhere?
Or shall I, sort of, you know take the plunge
and go back into education again?

Thus "education" is represented as an object that can be "put on the back burner" but also as a container which might threaten to engulf you if you "take the plunge". Going back into education is contrasted with "getting nowhere", and the idea of education as a space of containment is echoed in Simone's description of the places where she has been since she decided to "take the plunge". Simone enrolled for a Fresh Start for Women course at a local centre, one of the college's "community-based" centres, which she said was "a lovely sort of easing me back into it". She described this place as "a very close knit little college and I felt very cocooned there". The comfort and safety of the "cocoon" belongs to the same metaphorical idea of the container, in which you can "plunge" but in which you are also in danger of being overwhelmed. At the time of our interview, Simone had just begun a full-time course at one of the main sites of the college, and she described her initial anxiety at the thought of coming to this "bigger college",

I thought oh my gosh,
maybe I won't be able to cope,
maybe I'm not academic enough and
you know, it's all going to be overwhelming for me

Having gained confidence in her academic ability, Simone went on to describe her plans to acquire a professional qualification. This will entail a move from the horizontal plane of *further* education to the vertical dimension of *higher* education. It is interesting to note how this is expressed in a move from metaphors of containment, describing university as "another daunting place", to metaphors of linear movement along both space and time,

I've got a long way ahead of me...
...that is another step...
whatever avenue I will have to travel, I'll go for it
but it means I have another four to five years ahead of me
which I am determined to do

Now this image of time, conceptualised as space stretched out "ahead of me", adds a temporal dimension to the container that can threaten to overwhelm the student who has decided to "take the plunge". A material factor in the construction of FE colleges as "greedy institutions" (Edwards, 1993), is a funding methodology that, as well as rewarding specific outcomes, rewards the "retention" of students on courses for specified periods of time. Thus lecturers come to evaluate aspects of teaching and learning in terms of the extent to which they can hold on to students. Ruth, for example, describes her course as one in which "the retention is actually quite good", and goes on to explain,

What holds them there
is the fact that they're in a group
and they're working with others

and that they're sharing their learning...

From the lecturers' perspective, there is a tension between the vocational goals of further education and the pressure to retain students on courses. As a lecturer on courses for students like Simone, who are committed to several years of study, Ruth says that she is glad that "we don't just feed people into jobs". Thus the labour market is represented as another container, into which students can be fed, and therefore engulfed or swallowed up. Other lecturers, like James Wilson, talk about students who get jobs before completing their courses as people who "don't come back",

... a lot of our students when they do their work placement
actually get offered jobs
but don't come back and complete
and as far as the college is concerned
that's seen as a failure,
but the employer has seen these students
and they're employable.

James Wilson also describes what can happen when students have to take part-time jobs in order to finance their studies,

Once you start seeing people getting jobs
they start to drift away
and if it's a two year programme
in the second year they're going to really struggle with motivation.

There is some degree of fluidity in the idea of a space into which students can *plunge*, or from which they might *drift away*. Nevertheless, the places in these accounts are clearly spaces of enclosure which people come into, where they can be held, cocooned or overwhelmed. For Lucy Browne, a senior manager, FE is a place she has "hung on in" since moving from teaching in secondary schools to further education. When asked which aspects of her working life had been most important to her, Lucy responded:

Why I've hung on in FE
is because I do have feelings about what FE used to represent at least
which was a second opportunity for people.

The place where Lucy Browne has "hung on in" extends beyond the particular college to the whole of FE. In a one-dimensional view of space, Lucy is unequivocally located on the inside. However, in the constant shifting of tenses used to describe the space and her feelings about it, Lucy draws our attention to the temporal dimension of a shifting space in her articulation of ambivalence and uncertainty about what kind of a space it is now. She tells us what it used to "represent", rather than what it used to be – leaving open the question of whether this space ever existed beyond Lucy's feelings about it. Whether it is real or imaginary, the representation of FE as a "second opportunity for people" depends on the notion that there has been a first opportunity, and the use of the term "second" suggests that this is a repetition of the first opportunity, rather than a new and different space. However, it is possible that Lucy may include herself among the people for whom FE used to represent a second opportunity. Remembering Lucy's own transition from school to FE, and from teaching to management, the addition of "at least" to the idea of a "second opportunity" promises the possibility of something more. Lucy's view echoes Simone's idea of education in general as a container which can be *kept on the back burner*, while FE provides a particular point of entry *back into education*.

Later in the interview, Lucy talks about flexible working hours, and discussions in the management team about "being open most of the year",

And we do that on some income generating courses.
What we don't do is bring school students in if you like
in the gap between leaving school and actually doing something, doing a course
and I think there might be some mileage in that actually, in terms of basic skills and IT.

The description of FE as representing a second opportunity in the previous extract seems quite different from this idea of the place Lucy occupies now. Here she speaks consistently in the present tense and identifies herself with the organization in her account of the things we do and the things that we don't do. Lucy uses the term "gap" as a space-time metaphor in which the gap, as an empty space between two places represents a particular period of time. This looks very like Deleuze's account of the transition between two spaces of

enclosure, as school students, having left school, are represented as being nowhere until they are "actually doing something, doing a course". However, Lucy proposes filling the gap with something that she doesn't describe as a course, but as a set of skills "basic skills and IT". Now we see a glimpse of the "limitless postponement" of "perpetual training" and a paradox whereby the process of filling the gap between places opens up the boundaries that held them apart. In the context of a conversation about flexibility and "income generating courses", we suggest that "gap" can also be interpreted within the discourse of the market place. 'Gap', in this discourse, signifies a potential for consumption, a gap, or niche in the market. In commenting that "there might be some mileage in that", Lucy has shifted from her position of collective agency as "we", to invoke the idea of linear movement along a route that might be travelled in the future. With no agent attached to this notion of "mileage", the "gap" is left as a vacancy, a place of possibility.

Flexibility and the desire for enclosure

Since the data presented here was selected with a focus on metaphors of containment, it is hardly surprising that education, and FE colleges, are represented primarily as spaces of enclosure. A different focus would allow different stories to emerge. However, while we have found elsewhere in our study that the discourses of flexibility are most likely to be embraced by senior managers, these are the same managers who endorse the production of images in the college prospectus that say "come inside – this is a place in which to be nurtured, stimulated, developed...". Rather than presenting time and place as constraints from which flexible arrangements will liberate us, the prospectus shows the college as a container full of desirable objects, activities and social relationships. It would be wrong to draw conclusions from such a partial account. What we have attempted to do here is to show how the colleges are constituted in language and in pictorial representations as particular kinds of places. Massey's notion of space as a dynamic event involving social relations and processes has helped us to take account of the dimension of movement and time in many of these representations, and to note the strong focus on the location of people in places. While we have seen only the merest glimpse of the "limitless postponements" of the postmodern corporation, we have also seen how spaces of enclosure, with their laws and disciplinary constraints are also constituted as desirable places in which to be. This suggests a tension between the notion of flexibility as a liberation from constraint and the strength of human desire to be inside a place.

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FUZZY BOUNDARIES AND FLEXIBILITY IN FURTHER EDUCATION.

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Introduction

Discourses of flexibility suggest both different ways of working - a shift away from job demarcation - and a different disposition towards working - one in which workers are enterprising and self reliant in responding to the needs of 'customers' and learners. In this paper we focus on dispositions: the ways in which a sample of teaching staff in further education talk about themselves and their work roles; how they construct and make sense of their own professional identities, positioning themselves in relation to current understandings of flexibility.

In providing this text we are of course constructing our own narrative, drawing on the structural properties of the texts and on creative inferences based on context and previous experience (Gee, 1991). In sorting the interview data we found ourselves able to confirm Sue Jones' observation that

Different persons, with different perspectives and different curiosities about the area of investigation will inevitably find different categories with which to structure and make sense of the data. (Jones, 1985: 266)

Shifting identities

In examining the position of lecturers in further education in the UK James Avis (1999) suggests that a transformation of teaching and learning is opening up new forms of practice and new possibilities for identity. Whilst for some these possibilities might be seen as liberating and empowering, for others they represent deskilling and an erosion of professional autonomy. Avis identifies a troubling paradox between the apparently progressive models of educational practice backed by a rhetoric of learner centredness, relevance and transparency, with teachers' experience of the conditions and pedagogic context in which they work. Along with other commentators (see for instance, Ainley and Bailey, 1997, Yarrow and Esland, 1999) Avis associates these changes with the political dominance of the new right, the shift towards economic and managerial priorities in the workplace, and the consequent need to remake the mould of the public sector professional. For Avis the workplace is seen as a 'site of struggle' in which the values of liberal humanism are threatened by a subtle and persuasive manifestation of reformist capitalism. A significant aspect of this struggle is the 'on-going transformation of what it is to be a college lecturer' (Avis, 1999: 260).

Working outside the field of further education several commentators (for example, du Gay, 1996; Rose, 1996; Casey, 1996; Farrell, 2000) have also noted that working identities have changed radically, and have suggested understandings of the change processes at work. Casey (1996) describes 'the *hidden curriculum* of work that shapes and socialises adult workers' using a range of 'spoken and unspoken social and cultural messages, rules, codes and symbols...' (78). Farrell (2000) has argued that discourses of 'quality management' are implicated in the discursive construction of an idealised, globalised working identity - that of the autonomous worker. Du Gay takes the discourse of 'excellence' and the 'enterprise culture' to show how attempts to shift work-based culture are fundamentally concerned with the production of workplace identities. The enterprising qualities or characteristics which are represented as desirable within these discourses are those of self-reliance, personal responsibility and flexibility. In the post Fordist work environment the need is for workers who can regulate themselves. Drawing on the work of Foucault (1997, 1980), contemporary forms of regulation in the workplace are understood in terms of the shaping of subjectivity; a non-coercive form of discipline which cultivates the self steering capacities of the individual. Here disciplinary power works not through repression but through the development of individual's 'dispositions and habits' (Ransom, 1997: 156) which align the values and attitudes of the worker with the goals and missions of the organisation. This 'pastoral' form of governance 'enables individuals to actively participate in disciplinary regimes through investing their own identity, subjectivities and desires with those ascribed to them by certain knowledgeable discourses' (Usher and Edwards 1998: 215). One such 'knowledgeable discourse' is that of flexibility.

These analyses move our attention away from the significance of flexibility as an accurate or viable notion of how people might work or learn towards its role in the discursive construction of learners and workers, and how these constructions influence the way people work and learn. Differing formulations of what it means to be a worker perform the 'work' of defining or re-defining individual identity, and the consequent possibilities for thought and action. Identity is taken here not as an essential category, the coherent, unified, humanistic subject of the Enlightenment, but as historically and culturally produced. From this perspective the stories through which people construct their identities are not transparent insights into their essential selves but

shifting narratives which incorporate a variety of existing cultural texts which are woven together to 'make-up' identity (Hall, 1992; Usher, Bryant and Johnson, 1997). In studying those who work and learn in the context of Further Education colleges theoretical perspectives which view identity as discursively constructed provide an interpretative stance from which to view the accounts of learners and workers throughout the institutions. Here we look at three case studies of members of staff drawn from both of the colleges involved in the research project, focusing on the ways in which they construct boundaries around their professional identities

Discursive positioning

Deborah is a full time lecturer in the rural college. Here she describes her reading of social and institutional expectations of the work role:

....it seems that people don't want, or society doesn't allow, them to be pigeon holed. You have to be able to skim and skate from one area to another. And I think that is good in some ways because you can, in theory, cover everybody's job, but the problem is ...we excel in different aspects at different types of work so I don't see how that works actually in reality.

The ambiguous relationship between agency - 'people don't want' - and structure - 'society doesn't allow' - is evident in her opening remark. This is significant in relation to discourses of identity which stress autonomy and appear to open possibilities for independent thought and action. For Deborah these possibilities are more theoretical than real since 'you *have to* be able to skim and skate' (my emphasis). As Farrell (2000) observes, the move towards autonomy in contemporary workplace discourses may not be as risky an enterprise as it first seems, since employees are already schooled into particular forms of subjectivity. Deborah characterises this desirable identity as one which refuses to be 'pigeon holed', a term which has come to have derogatory associations, and might be linked with more stable modernist views of identity. Those who wish to escape pigeon holes are then required to 'skim and skate', never able to settle in one work role or give their undivided attention to one task as they constantly strive to cover a wide remit. The effects of this are seen as ambiguous and contradictory, as acknowledged gains in work role flexibility are countered by a lack of expertise in some areas.

Deborah is relatively new to FE, seeing her move into this area of employment as 'practical' and 'mercenary'. Her current post is a one year contract to cover maternity leave. She sees this as a way of checking out teaching in further education as a possible career move - 'so I am here to experience how it is and to see whether I want to be doing this later on'. She adopts the tone of an ironic outsider, using humour to distance herself from the jargon of the college - 'when I first came here the students' timetables were in a form of Swahili' - and from the rhetoric of flexibility. In this extract Deborah uses her words to make a positive statement whilst using her body language to say something different.

I do not have a full time table and the whole department is working flexibly,

At this point the interviewer intervenes to interpret back to her this non-verbal meaning.

Right, now you say that with a facial expression that the tape wont pick up ... I think you have made it clear that you would prefer to have a clearer brief and that flexibility perhaps equals chaos and disorder.

The use of visual signals is interesting since it disguises her meaning from the audio recording, but not from the researcher. Deborah, it seems, is skilled at taking up a sceptical position whilst taking care to avoid being identified as disaffected. This may be a sensible strategy given the tenuous and conditional nature of her employment. Casey (1996) identifies a number of strategies by which employees construct defensive self protection against the processes of 'corporate colonisation'(163) which fall broadly into three clusters: defense, collusion and capitulation. Deborah's strategy here has some resonance with Casey's notion of 'capitulation' in that she adopts an 'ironic cynicism' as a means of 'maintaining a sufficient sense of self-boundary' which 'protects against both commitment to the company, which requires self-denial and dedication, and its further encroachment into the private realm of (relative) individual choice and apparent self determination' (175).

Her sense of being a newcomer to, and on the margins of the culture of further education is evident in other ways:

I think.... experienced staff in the department seem to buzz from the flexibility and I'm sure that's the length of their experience and of course I don't have that, so its more threatening to

me because I don't have those resources that they have... I wonder if it feeds itself now I am thinking about it..."

Here she again positions herself as an outsider, someone who has not yet mastered appropriate ways of acting and being in the context of the College. She presents herself in an apprenticeship role, still in the process of accumulating those 'resources' which will enable her to also 'buzz'. In the final comment, however, she also distances herself from the implied understanding that this is a useful developmental process, part of becoming a full member of the College's community of practice. The comment suggests that 'buzzing from flexibility' may be less the result of experience and capability, more the outcome of processes which are less rational, or indeed healthy.

Whilst prepared to acknowledge that flexible ways of working can be 'good in some ways' Deborah also points to the ways in which it can have a negative effect on students.

The students get pushed to the end sometimes because the system's so flexible and so reactive the very purpose for our being sometimes gets forgotten or lost under paperwork...and because of one crisis following another, people are running down the corridor going to a lesson, then the room gets moved or there isn't the right resource for teaching, so in terms of disorder...to me it's important that students have continuity and that they are valued and that they are here to learn, and I don't quite understand how they are going to feel organised and ..respected...

Here she positions herself as on the side of students and learning. Flexibilities in the college's organisational systems and in the delivery of teaching and learning are presented as undermining the needs of learners for continuity, order and respect. Here we see the identity of the teacher represented in Avis' analysis of the post-Fordist workplace (1998), attempting to be self regulating and empowered in a context where the rules of engagement are defined by others to serve the interests of others.

Identification with the interests of students is a position taken up with passion and commitment by Ren, a full time lecturer and a trades union representative in the urban college. He nails his colours to the mast in no uncertain terms:

I love the students but hate the organisation

Ren is comfortable using the language of flexibility, consistently interpreting it as part of a systematic managerial discourse designed to govern the conduct of staff. The corporate discourse of flexibility has certainly come to colonise his everyday life, but not perhaps in ways the institution might have anticipated or wished. His analysis is grounded in his experience of the further education context but forms part of an ideology which goes beyond this.

For people in most jobs...it seems that flexibility is now the thing and insecurity is also sort of snapping at your heels so people are much more pressured.

Flexibility is represented as acting in the interests of management, not teaching staff.

There is some very marginal flexibility but it's mostly dictated by management needs rather than my own needs...what the Principal wants in terms of flexibility is an open contract, you know, they say right you've got 38 weeks, we want you to come in any old time. We don't want you to make a distinction between contact time and non-contact time and you know as a human being and a teacher as well as a Union official there's no way I'm going to swallow that kind of flexibility.

Resistance to 'that kind of flexibility' is supported by reference to identity beyond his role as a teacher - and to certain norms and standards which are associated with being a 'human being' and which are also backed up by the activities of the Union. For Ren his sense of identity derives from his loyalties to subject teaching and to his students. Flexibility becomes the 'other' which allows him to delineate his own position. Standing against 'flexibility' is represented as standing on the side of students against managerial practices which seek to distort and disrupt the liberating potential of learning. For Ren job satisfaction lies in pursuing his academic work as a subject teacher and he is aware of the political significance of this position within the college:

There seems to be a difference of positioning between those members of staff who have adopted cross college roles (usually involving managerial responsibilities) and those who

remain in subject teaching. The former tend to embrace flexibility, or feel they are obliged to, the latter are more resistant to it.

Ren's analysis echoes that of Avis (1998) who describes modernising changes in the curriculum as a 'move' which 'breaks the link between scholarship and learning' (75) and is marked by a displacement of the 'subject specialist' by the 'learning facilitator' as the more desirable form of professional identity. Teaching staff in both colleges were engaged in negotiating this shift in values and practices in the knowledge that how they managed the transition would have a direct impact on their career progression. Locating his own affiliations with subject teaching might rule Ren out from career advancement, but it does have compensations. One of these is allowing him to ridicule the behaviour of managers:

..we get a lot of panic here among managers who have situations they can't deal with, classes they can't cover and they want to be able to tell someone to go in and just, you know, 'I don't care what you do, be there'.

Flexibility is associated with a managerial approach which is obsessed with standards and the measurement of performance.

I think its like the five year plan in the Soviet Union. The only way people could survive was by people faking it. So I think any chance I get personally to fake my paperwork to make my results look good I will use...it doesn't affect the way students are being treated. Its about satisfying demands of management and they have a different rationality which is about setting targets...

The logic of Ren's position is that the priorities of management are so out of touch with the real needs of learners that falsifying his own records can do no harm to their interests. There is no ambivalence or ambiguity about Ren's position on the effects of flexibility; he knows he is right and derives a strong sense of self-identity and self-confidence from that knowledge. There is some resonance here with the Casey's (1996) 'defensive self', 'characterised by displays of multiple and various forms of small scale resistances, retreats, rationalisations and blockages' (164). His position is strongly ideological, allowing no concessions towards a discourse he interprets as similarly ideologically driven, located in Thatcherite notions of an enterprise culture. Perhaps unsurprisingly he does not see a future for himself in further education management.

Sally is a full time lecturer in the urban college. She began her own career as a mature learner in the same further education college where she now works.

So I came here and here were these 16 to 17 year olds ...doing part time GCSE's alongside me who was 35 and I just thought this is where I want to work, this is what I want to do when I get trained, so I kind of fought really hard to get a teaching practice here and to kind of wheedle my way in through part time work...

Sally identifies teaching as the area of her work which gives her the most satisfaction and reports spending a good deal of time sorting out the problems of students in her group. She is critical of managers whose only interest is in performance indicators rather than individual students:

...somebody on the top floor above us here looks at the numbers - and they do - because they bump into you in the corridor and say 'oh your numbers are down (Sally) and you just want to tell them about the histories of these individual kids, but they don't want to hear stories they want numbers....we're always told 'we're not interested in anecdotes about why this wonderful student got pregnant or went back to Somalia or whatever', you know, 'did you retain them or didn't you?'

However, she also finds herself drawn towards activities beyond the immediate teaching role.

some people are more like me, like still have a lot of energy and get asked to do things and keep themselves sort of visible, if you know what I mean. Like ... you'll be the one that offers to do it, who wants to go on the curriculum board, 'oh I'll do it', because I couldn't stand just putting my head down and teaching all the time and not, not being bothered about the wider college environment.

This is a 'can do' approach which fits well with images of the flexible organisation projected by popular management writers such as Peters and Waterman (1982); staffed by 'charged up people' who go out and become 'winners' for the organisation and themselves. However, Sally is also pragmatic and careful to put

boundaries on her willingness to take on new roles. She has recently taken on the role of 'lead tutor' which she describes as 'a sort of semi-management responsibility' on the basis that it gives her remission from some class teaching, but she draws the line at further involvement in management. She sees managers, such as her boss, as 'go-getters' who work all hours, and is protective of her own life outside the college.

I said I don't want a management job, I don't want to lose my holidays and all that but I'm really happy to do it for the hours so I'm really not pushing this management job because, my holidays and my life are very important to me but he's got, I've got some remission off time tables, I've got this time to do things, you know...so I suppose it's a mini-management sort of job without having to take on the title or the sort of horrible bits that go with it. So I do feel I've got some flexibility. I could go to him tomorrow and say 'hey why don't we do this' and he probably would say 'yeah go and do it'.

Sally is cautiously embracing flexibility of role, but within strict limits and in return for tangible gains. Her positioning is careful and strategic; willing to present herself as an entrepreneurial employee, but only to a certain extent and in certain contexts. Using Casey's three clusters it would be possible to characterise Sally as adopting some aspects of the strategy of 'collusion'. The colluded self is 'the ideal designer self' of the modern workplace (163); 'dependent, over-agreeable, compulsive in dedication and diligence, passionate about the product and the company' (191). She might also be identified with those 'enterprising capacities' which Rose (1996) suggests lead individuals 'to conduct themselves with boldness and vigor, to calculate for their own advantage, to drive themselves hard, and to accept risks in the pursuit of goals' (154). Yet this would considerably oversimplify her position. She is critical of management practices, particularly those associated with quality control, and could easily find herself in alliance with colleagues like Ren on issues of student support. The success of the entrepreneurial, flexible organisation depends upon blurring the boundaries between the personal goals and objectives of employees and those of their employers. Corporate employees are expected to have their minds and hearts 'on duty' even outside working hours. For Sally the boundary between her home and work lives appears to be secure, and any 'collusions' she might enter into are carefully negotiated.

The last word?

These are selections from the interview data which have been chosen for the ways in which they speak of identity and positioning. The story being told through the three case studies is one of multiple and complex positioning within discourses which draw on contemporary notions of flexibility, but also on many others. Far from illuminating a sharply defined outline of the teacher as liberal humanist, or as self-reliant, enterprising and flexible worker, what emerges is a more complex image of teachers in further education actively exploiting the fuzziness of their role boundaries, and the ambiguous spaces in the flexible workplace, as they construct and re-construct a variety of identity positions. Those offered here can be taken neither as definitive nor stable, but constantly in play and subject to change as the subjects of this study engage with the risky and uncertain enterprise of 'emigration to new niches of activity and identity' (Beck, 1992:194).

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TALES OF FLEXIBILITY IN THE LABOUR MARKET: A NOSTALGIC PAST AND AN UNCERTAIN FUTURE?

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Introduction

This paper will examine some of the constructions of flexibility which are deployed by a sample of our interviewees in relation to the labour market, and in particular notions of 'good' and 'bad' flexibility, which are suggested by their narratives. We have explored elsewhere the 'parallel versions' of the project that have been deployed to secure certain effects (Clarke et al, 2000a). In making explicit the notion of parallel narratives of the research process the authority of each tale is opened up to question. This paper works with this notion to highlight its own construction as a story with particular aims. It takes its cue from a seasonal tale, Charles Dickens' 'A Christmas Carol', a cultural reference that emerged during the data analysis process. Those familiar with this classic ghost story will recall the authorial moves: locating the story in the present, moving the action to good times past, back to the deprivation of the present, and finally to the hideous specter of the future. Ours is a more modest text. Rather than comprising a 'representative sample' of the interviewees, our characters have gained their place because of the directness with which they have addressed the themes of the labour market. While the structure of Dickens narrative will form a point of departure for the paper, other themes will also emerge.

Locating our story in the present – flexibility in the labour market

As one might expect, the research was informed by a conceptual analysis that drew from the existing research literature (Clarke et al, 2000b). This both framed our approach to the interviewing and contributes to our interpretations of the data. In locating our story in the present we are then drawing on the sometimes conflicting tales of flexibility that emerge within the literature on the present condition of the labour market. These tales are reviewed here in relation first to the general labour market and then to the particular context of the Further Education (FE) sector.

Both flexible accumulation and flexible specialisation emerge as important perspectives within the contemporary literature on the economic context. From quite different perspectives both point to changes which imply moves towards greater flexibility in the labour market. In relation to flexible specialisation a decisive shift is identified away from Fordist techniques of mass production to post-Fordist small scale production of customised goods (Piore and Sabel, 1984). Associated with such moves is the emergence it is suggested of the 'flexible firm' (Atkinson and Meager, 1990) that requires a well trained multi-skilled 'core' workforce. These core workers are augmented by a 'periphery' that can be hired on short-term contracts for a specific job or task. Flexible pay structures allow for continual changes in job role and workload.

Whilst some have questioned the very existence of such a shift in the organisation of work (Avis, 1996), this has not prevented such analyses from becoming influential in both private and public sector discourse. Changes within the FE sector in the UK, including the move in 1992 to establish colleges as corporations run on business lines, has led some to extend the analysis to examine the FE college as a 'flexible firm'. Given the high levels of part-time working, 64% of lecturing staff in 1996-7 (Kingston, 2000), there appears to be some potential for this type of analysis. However, the picture is far from clear. For example, Williams concluded that whilst '...some colleges embraced the flexibility which the use of staffing agencies appeared to provide' (Williams, 1998, 11) the overall research suggested few managers in the study appeared to favour this approach.

Our analysis thus far has emphasised the importance of these labour market discourses of flexibility within the literature. There are however accounts which challenge the centrality of economic dimensions of flexibility stressing the potential for different analyses to emerge in relation to the organisation of domestic labour and the care of dependents (Held, 1995).

However, our concern in reviewing the literature here is not to examine the veracity of these claims as such, but instead to consider the ways in which they have become significant as a means of making sense of the labour market by those working within it. What is suggested is that such discourses have been influential in arguing that a decisive break has taken place with past (inefficient) employment practices and that a new flexible work order is becoming established. Further they suggest that the new working practices are an inevitable outcome of widespread changes and that these are practices with which individuals in both public and private sector organisations will have to come to terms, and indeed embrace. The analysis we present below does not therefore intend to use the themes emerging from the literature as a point of comparison with

the interview data (although that may be appropriate). Instead it considers how such themes may provide a narrative context and repertoire upon which people draw in constructing their individual tales of the labour market.

Flexibility past

It was very easy to get a job then you know, you could more or less walk into a teaching job so I ended up here sort by chance really just looking for part time work and I actually did it from choice for quite a while ...I did quite enjoy actually not being full time. (Lee Winters, female, full-time college manager, Urban College).

Lee's account of her entry into FE emphasises her ability at that time to choose this part-time arrangement. For her the availability of work gave her a measure of control over her working life, providing the space to combine diverse interests in teaching and in the arts, thereby fulfilling different desires. Deborah, a female full-time temporary lecturer at Rural College, recounts a similarly diverse employment history. She has moved from apprenticeship within a scientific company to practising in psychotherapy to youth work and teaching in community education.

These personal accounts seem to tell of a time when individuals could dip in and out of work and develop diverse working patterns. For these staff the availability of work in the past has facilitated a degree of flexibility for themselves as workers, enabling them to construct alternative patterns of 'flexible' employment, patterns which seem to resemble current notions of portfolio careers (Handy, 1996). So a picture of past flexibility in the employment market emerges from these accounts, one that is permissive, that enables individuals to pursue different interests and desires and to exercise choice in the labour market. Here of course we are drawing on the personal narratives of two women who it could be argued had both the social and human capital to exercise such choices. Alternative narratives emerge from those for whom employment was more of a necessity and choice much more restricted. Indeed Lee marks her own point of departure from this time as resulting from her need to 'commit' to full-time employment in order to provide income for her family.

Despite their personal narratives of diverse employment and change, when asked explicitly to reflect on the labour market both Lee and Deborah take as their starting point the continuity and security of the past. Both draw on dominant narratives of change in contrasting the possibility of 'having a job for life' in the past, together with a reasonable expectation of secure employment, with the present situation. The texts of these interviews suggest then a disjunction between the personal narratives of their autobiographies and the narratives which they provide of the generalised labour market. The latter draw on accepted views of the past and appear distanced from their own experiences.

Although presenting different narratives of the past, the personal and the generalised, what emerges from both texts is a positive nostalgic tale. The past is viewed as a safe haven from present uncertainty. Whilst security of employment is stressed in the generalised tale, choice and the ability to follow ones desires is dominant in their autobiographical accounts. The perception of the availability of work provides the basis for the emergence in the narratives of a sense of what we are calling here 'good flexibility'. This is the flexibility that has its basis in good times, in security and the ability to exercise choice in planning diverse routes through the labour market. It is, as we will suggest later, a notion that has more resonance for some of our interviewees than others, for those with different personal biographies the notion of 'good flexibility' of the past may be far from persuasive.

Flexibility present

As indicated above when thinking about the present situation Deborah, and Lee in particular, suggest that the labour market has changed decisively, and for the worse.

I think that people did expect at one time to have jobs for life, that expression, whereas I think that now that's obviously not really there any more.....I would say it has made people more insecure actually, you know it maybe a good thing in one way, but I don't think you can necessarily sort of plan even to have a career.....you could see it as more exciting ..but...I haven't met that many people who see it as exciting. I think its nice to have a choice, I don't think people see it as a choice, it is sort of a necessity....I don't see it positively particularly personally. (Lee Winters)

Lee takes it as 'obvious' that a change has taken place echoing the dominance of narratives of change in the labour market which are powerful both outside and within the college. But she challenges the constructions

of these changes as beneficial. Whilst she accepts that one could, or perhaps should, see these changes as exciting, for her they are a source of troubling insecurity. She feels she is not alone in this view, suggesting the weakness of dominant narratives in securing positive understandings of these changes. Here she seems to be pointing to the way in which change may be levered into place through fear and insecurity rather than through processes of seduction. For Lee the concerns that she expresses about the current labour market seem to centre around the perceived lack of choice, which may force people into those jobs which are available and militate against a notion of a planned career.

Jo, a female full-time manager at Rural College echoes these concerns and suggests that flexible recruitment practices are already denying some staff a sense of a 'professional career'. She cites the example of a member of staff who is working in two part-time jobs within the college on different pay scales reflecting different levels of responsibility, for her this is a problem that needs to be clarified and 'made sense of'. For Jo the 'huge growth' in short term, temporary contracts has the potential to lead to the exploitation of staff. Lee points to the dangers for managers too in this approach, suggesting that inappropriate staff may be taken on in haste on short term contracts 'just to staff the class'. In her role as a lecturer Deborah expresses some of the pressures of infinite adaptability that are being required of her. As a new member of staff, there for one year only, she feels she is being asked to 'skim and skate from one area to another' to plug the gaps, and wryly describes the relationship between what she was recruited to do and the reality of her varied classes.

For these staff policies of flexible recruitment are already impacting in their working lives. While they draw on understandings of flexible working to make sense of these experiences they do not reproduce the positive views of these changes prevalent in some narratives of change. Instead they emphasise the dangers of these new practices for both teaching staff and managers alike.

Not all the staff interviewed held with this negative view. Barney, a male full-time manager at Rural College, suggests these changes have not gone far enough. He is concerned that in his area of the college current practice does not reflect models of the flexible firm.

They employ very, very few hourly paid workers. So what they have done rather than keeping the sort of shamrock effect where you've got a small group of core workers and a large group of flexible, they haven't. They have actually increased the core, which has actually detracted from the flexibility of its staffing model... (Barney).

For Barney then the college's employment practices are not flexible enough, and do not reflect his model of the ideal that is clearly drawn from the private sector. He is concerned that the current arrangements hinder him as a manager from acting in a businesslike manner and redeploying staff to, for example, evening teaching. His narrative suggests it is students who will ultimately suffer from this lack of flexibility, making a link between flexibility in contracts with flexibility in delivery. He draws strongly on dominant narratives of change in employment to suggest that the much needed changes will benefit the customer, in this case working students, rather than the organisation or himself as a manager.

With the exception of Barney the narratives which we have drawn on here contribute to a darkening tale of insecurity. They tell of flexibility that is imposed, which limits choice, and which works in the interests of the organisation. These tales of the present begin to suggest the presence in the narratives of a sense of 'bad flexibility', which reflects the negative meanings of flexibility deployed by these staff and is specifically linked to lack of choice. Like Dickens' distressing portrayal of his characters' present times the darkness derives in part from the contrast which has been made with the previous good times, and the good flexibility of the past.

Flexibility yet to come

For some interviewees narratives of the future labour market could be seen to be extrapolations of those of the present. The theme of insecurity already highlighted by college staff in relation to their own sector is amplified when constructing visions of the future for their own FE students. This continuity might be viewed as reflecting a sense in which 'the future is already amongst us', but might also suggest a lack of alternative narratives of the future which are powerful for these staff. Unsurprisingly then a sense of pessimism pervades their narratives of the future, and as in Dickens' story, the tales of the future become darker still and likewise stalked by threats of ignorance and want.

You might get a job or whatever I suppose eventually, a lot of them possibly won't, but you are not necessarily going to be equipped just to switch to another job if you want to.... You won't necessarily understand what is going on....I think it's quite difficult to be in control. I think it

would be very easy for them to get left behind basically by changes, they can't keep up with what is going on. (Lee Winters)

Lee appears to be suggesting here that the current insecurity she has identified may extend from the prevalence of short term contracts to the ability to get work at all. She draws on notions of the 'flexible worker' switching from job to job and suggests that such approaches will be necessary for her students. But she appears to doubt whether the students that she is teaching with have the skills to do this, or indeed have the understanding to see what is required. Notions of equipping students with the skills to be lifelong learners, as the college mission states, are seen as unrealistic. In her efforts to unmask the likelihood that these students will be even more disadvantaged in the future labour market, she perhaps portrays them almost as victims suggesting little space for agency, resistance or even understanding of their condition.

Disquiet at the consequences of continuing current models into the future are echoed by Deborah who sees it as inevitable that economic forces will produce losers, who may include herself and her students.

There can't be global success in a global economy. If somebody is failing its somebody else's successes or losses, somebody else's profits. I don't know the whole thing leaves me quite uncertain. (Deborah).

For these staff the future for their students isn't of bright technological change and continual advancement but a darker one of uncertainty and marginalisation, a cautionary tale which both replicates and challenges dominant narratives of the future. On the one hand their tales draw on narratives of global competition and flexible working in constructing the future. Lacking an alternative vision, their tales are constrained by existing models and seem to echo the notion of a decisive break with the past. The notion of 'jobs for life' is therefore confined to narratives of the past, where it is reified into a golden age. But at the same time they construct alternative meanings that challenge the positive vision of a high skill economy. Here flexibility in the labour market comes to have very fearful connotations implying a lack of choice and indeed a lack of understanding.

Flexibility good and bad

This paper has used a classic story as a point of departure, structuring the text around tales of the past, present, and future. The narratives we have drawn on here to some extent reflect the atmosphere of Dickens' story as it moves through good times past, the difficult present to a fearful future. What we have attempted to demonstrate is, that in the telling of their tales, these staff are drawing strongly on the dominant narratives of the change in the labour market. And that these narratives are used even when their own biographies provide a source of alternative narratives. But while they draw on dominant narratives to convey changes in the labour market they at the same time challenge the meanings of these changes. We have attempted to highlight these challenges as associated with the emergence in the narratives of notions of 'good flexibility' and 'bad flexibility'. Whilst the presentation of a dichotomy here may appear overly simplistic it does have some value in conveying the strength of the concerns of some staff with the implications of the dominant models of the current and particularly the future labour market.

Central to the notion of 'good' flexibility is the ability to exercise choice in the labour market, to construct one's own career knowingly. Those with the resources to exercise this choice look back to the security of the past with nostalgia as a time of greater freedom to be flexible. Good flexibility is for them the flexibility that they choose to exercise rather than flexibility that is done to them. By contrast, for some staff flexibility is already imposed and they fear they will become increasingly subject to compulsion in the service of flexibility. This 'bad flexibility' is associated with a lack of real choice and having to fall in line and take what is on offer. It suggests a lack of agency and the break down of notions of career.

While this paper has focused exclusively on narratives of the labour market, wider analyses of the interview texts suggest that notions of good and bad flexibility may also be meaningful in other contexts such as control over the curriculum and working hours. In these wider contexts it is the presence of choice and agency, associated with good flexibility, and the relative absence of choice, associated with bad flexibility, which may be significant. Further work will attempt to draw out more nuanced meanings from the texts.

Absences from the text and counter tales

This paper has presented elements from the texts of some interviews conducted with staff. However, in constructing our own tale of the research there have inevitably been exclusions. Prominent amongst these exclusions has been the absent voice of students who appear here only obliquely within narratives about students rather than by them. The narratives of students we interviewed might well challenge the tales

presented by staff, both in relation to the nostalgic past and the troubling future. For those students who have come to college in an effort to get on the 'career ladder' the past may not have such rosy connotations, but be characterised by dead end jobs and the absence of choice. Rather than viewing the past with nostalgia they may be striving to move away from it. Similarly they may see their future as improved by their access to qualifications and the opportunities that these may open up. Indeed they may have greater faith in their own abilities to understand and work the uncertainties of the labour market. A brief extract from the text of Simone, a female full-time student at Urban College, demonstrates the potential for a more optimistic tale. In reviewing the ladder of courses which she has identified for the future she says

...whatever avenue I will have to travel I'll go for it, but it means that I have another four to five years ahead of me, which I am determined to do. (Simone)

Earlier we presented the narratives of selected staff as challenging the dominant narratives of the labour market, in particular in providing a negative construction of the changes. The inclusion of the narratives of students might well produce another counter tale, one that is more optimistic and challenges the cautionary tale presented by staff.

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COLLOQUIUM 2

POLITICAL ASPECTS OF WORKBASED LEARNING

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Introduction.

In 1999 the first cohort of students completed the Graduate Diploma in Social Sciences (Community Services) at UWS Nepean. The course is a Workbased Learning (WBL) project which is the product of a partnership between the Workbased Learning Unit (WLU) of UWS Nepean and the Association of Childrens Welfare Agencies (ACWA) – a peak body in the NSW community Sector. The development of the Graduate Diploma has highlighted its position at the junction of several intersecting discourses within contemporary political economy.

As a graduate diploma the course is situated within the changing environment of tertiary and higher education within Australia. With a focus on practice within community sector professions it is also located within the discourse on vocationalisation of universities and it embodies the emergent trend towards workbased learning and the associated recognition of prior learning (RPL). In addition to these things the graduate diploma is located within the community sector and its parallel developments. The decline of the welfare state and its impact on community organisations, the rise of economic rationalism and managerialist approaches to community management and funding and the focus on service provision above community development have all been significant influences in recent times.

Engagement with these intersecting issues has been a significant aspect of the development and delivery of the graduate diploma and the partnership on which it is based. A case study on the graduate diploma is currently underway to investigate the way in which these things have shaped the partnership and the course development and delivery. One aspect of the case study looks at the experience of students who take part in the course and the impact it has on them personally, professionally and within their organisations. This paper is a provisional report on some of the issues raised by students in a small number of initial interviews and poses some possible questions arising from data collected in those interviews.

Context.

Where to WBL?

The skills are defined in terms of the needs of employers, which are then represented as the general interest. Yet the purposes of employers are not always identical to the purposes of students, or graduates or employees.
(Marginson, 1994:3)

In considering the transfer of skills from education to work Simon Marginson (1994), rightly highlights one of the dilemmas that universities face in creating workbased learning opportunities. The establishment of partnerships in order to facilitate workbased learning creates an additional, direct involvement in the learning relationship. The interests of the industry partner become an integral part of the educational matrix. Wagner and Childs (2000:10) highlight the tendency of WBL to be “under pressure to conform utilitarian demands” and cater to the “needs of industry”. More importantly they highlight the position of WBL as a “site of struggle between contradictory, economic social and political interests” (2000:10). The issue is compounded by the ongoing changes to education and higher education in general. The increasing privatisation and marketisation of higher education (Marginson, 1997:88-91) has also created relationships with industry which are as much about economic entrepreneurialism as about educational innovation.

This dilemma of competing interests within the domain of WBL is particularly relevant within the community sector which has its own parallel series of changes. Community sector organisations have not only been subjected to the pressures of economic rationalist ascendancy (see for example Rees, Rodley and Stilwell, 1995), but have also been burdened with the increasing demands on the community sector as a result of the declining welfare state (see for example Hobbsbawm, 1995, ch.14). In the case of the former, many economic rationalist strategies are in direct conflict with policy positions within community sector organisations (Dow, 1999: 210). In the case of increased burden, however there have been numerous reconfigurations of community sector approaches which embody a broad range of ideological orientations (Macintyre, 1999:112-114). For workers in the sector there is, therefore the task of evaluating a range of changes, including both managerialist initiatives and practice based initiatives.

Strangleman and Roberts (1999:1-2) point out that clarity about competing interests embodied in new forms of work practice can be lost in the absence of a critical perspective, adding to the weight of argument for critical approaches to WBL.

A community sector need.

The need to increase skill levels in the community sector has been recognised by ACWA as part of its role and function as a training organisation, but the needs have also been recognised more formally through the Vocational Education and Training (VET) plan (CSHITAB, 1998). There is a shortage of qualified workers in the sector and their lack of qualifications combined with relatively low wages and lack of formal training structures provide significant barriers to further education. However, many of the workers in the sector have considerable experience in the field.

A critical stance.

The issues described above have greatly influenced the development and delivery of the course. The overarching approach to the graduate diploma has been represented by Wagner and Childs (2000) as workbased learning as *critical social pedagogy*. They summarise the critical approach to the course as WBL framed by: "The relationship between education and the economy, the relationship between theory and practice in education processes and the dualism of education and training associated with institutional divisions." (2000:11).

The major component of the course is a workbased research project which is undertaken in tandem with subject units, delivered holistically in block study periods. A significant number of students enter the degree through a recognition of prior learning (RPL) process, based on their experience in the sector and skills and knowledge acquired through previous formal and informal learning.

A case study in the politics of WBL.

The ideas presented here derive from research which is part of a major case study of the Graduate Diploma Social Sciences (Community services). The case study aims to investigate the partnership from the point of view of the motivations and visions of the stakeholders and how these things shape the development and delivery of the course. The study includes the experiences of students on the course.

The specific ideas presented come from provisional interviews with a small number of graduates from the initial cohort of students from a number of community organisations. The comments made in relation to the data collected are tentative constructions of themes emerging at the time of writing.

Methodology in brief.

The participants in initial interviews are graduates of the first year of the course. In the initial interviews six participants have been interviewed to date from five organisations. The interviews took the form of semi-structured discussions covering several themes. In order to investigate the issues around choice the course and its impact, participants were asked to respond to the following major themes/questions:

- How did you come to do the graduate diploma?
- How did the course impact on you personally?
- What impact did it have on your practice?
- What impact did it have on the organisation?
- (What were some of the significant experiences/challenges you had during the course?)*
- (What are your reflections on the course having completed it?)*
- What significant issues would you raise about the course?

*NB. Questions used to prompt further responses where participants did not expand into these areas in response to other questions.

The interview process loosely follows Kvale's (1996:188-209) approaches to interview analysis of semi-structured interviews. At the time of writing this paper only provisional analysis has been made of the interview data. All interviews were recorded and transcribed. The provisional analysis has been to ascertain broad themes emerging from the interviews. At this stage there has been no formal analysis process applied to the data.

A summary of responses.

The responses to the four major questions above are summarised below. Some issues were raised across the thematic spread of the questions and are highlighted where they predominantly emerged. The responses are categorised into major themes and sub-themes or specific types of comments.

How did you come to do the graduate diploma?

- Convenience
 - respondents indicated that they were generally in the "right place at the right time", eg. They heard about the course and were interested
 - the course "fitted in" with work arrangements
 - the course utilised their work, therefore it optimised their capacity to study
- Access
 - respondents saw their recognition of their work and experience as crucial to their acceptance
 - some comments indicated that the students felt it was the only way they would be accepted given their lack of formal qualifications/study
 - the limit of the course to one year full time was seen as an incentive and aid to successful completion
 - there were several comments to the effect that interviewees saw "formal" university study as intimidating and inaccessible
- Other
 - one respondent had planned, both financially and educationally to study and saw this as an opportunity in keeping with their plan
 - one student had a specific commitment to the idea of workbased learning as an integrating process of theory and practice

How did the course impact on you personally?

- Satisfaction
 - there were numerous comments expressing high levels of personal satisfaction at undertaking the course
 - respondents also talked about feeling highly stimulated by the course
 - some respondents commented to the effect that they took themselves more seriously, as a result of doing the course, especially in the area of research.
- Confidence
 - there were several expressions of increased confidence as a result of doing the course
 - one respondent commented at length about their increased faith in their capacity to take on higher responsibilities within the organisation
 - several people commented on the high level of support within the course
- Other
 - several respondents commented on the difficulty of studying and adjusting to the demands of the course
 - one person commented on the significant effect of coming to terms with the possibility of failure

What impact did it have on your practice?

- Affirming practice
 - several comments were made about the course affirming good practice
 - some comments were made to the effect that the course increased confidence in practice
 - there were significant comments about persisting with practice which was different to common practice in the organisation, for example in establishing group work with clients as opposed to one to one work

- Conscious orientation to practice
 - respondents suggested that undertaking the course increased their conscious approach to practice
 - several respondents commented on an increased habit of questioning assumptions, both their own and organisational assumptions.
 - One interviewee talked about the resurrection of "good practice" as a consequence of undertaking the course
- Advocacy of best practice
 - there were numerous stories of advocacy for changed practice as a result of undertaking the course.

What impact did it have on the organisation?

- Organisational influence
 - most interviewees felt that the course had a positive impact, though this was not always the perceived view of the organisation
 - one person suggested that the course had no impact on the organisation (or on personal practice)
 - some responses indicated that the changed personal practice had an organisational effect
- Organisational support
 - there was a range of levels of workplace support for students
 - no one felt that they had received active support, while two people felt they had passive support and were trusted to "get on" with the project
 - some people commented on collegial resentment about their study
 - some people had varying levels of financial support from 50% to 100%
 - most people started with supportive arrangements in terms of organisational time/study leave etc.
 - there were some examples of declining support for students over the course
- Conflict/dissent
 - several students reported conflict within their organisation
 - in some cases the conflict represented organisational hostility towards students
 - only one student felt that the conflict had been resolved
 - some students had indicated that conflict contributed to their desire to or actual moving on
 - the examples of conflict were all perceived by students to be due to advocacy for better organisational practice

Discussion

While cautious about venturing beyond tentative comment at this stage of the research there are three themes emerging from the provisional interviews that have created interest in the initial analysis.

Firstly it is interesting to note a strong theme in relation to students perceptions of universities as intimidating places which are hard to access. Wagner and Childs (2000:10) talk of the "privilege and elitism" in the production of knowledge and of the reproduction of social divisions through institutions. Notwithstanding this, I found the strength of perception surprising from people who had little or no direct experience of the university system. There was a strong sense that WBL was a unique opportunity to enter the university system.

The second theme of interest was the relatively low level of support and enthusiasm from organisations for students undertaking the course. It seems that while, in most cases, there was a kind of "organisational blessing" and trust of the students, this did not extend to active participation in the workbased project. In contrast students felt highly supported by the university and ACWA staff involved with the course and especially by the course coordinator. What is less clear at this stage is the level of support that would be seen as appropriate. This will inform future interviews.

Perhaps of most interest (and concern) at this stage, is the level of conflict and in some cases, hostility precipitated by the activities of the students. In some cases this has been in organisational settings where high levels of financial support have been provided and has led to removal of on the job support for project

work. It is impossible to attempt meaningful analysis based on the data collected so far, but it is interesting to note that some level of conflict is evident three of the five organisations included in these preliminary interviews. It raises questions for me about the nature of dissent arising from study in the workbased context and the way in which the learning of the student is mediated in the matrix of relationships presented by the WBL context.

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AN INDUSTRY PERSPECTIVE ON WORK BASED LEARNING IN THE COMMUNITY WELFARE SECTOR

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This paper sets out to explain the involvement of a peak industry body in the development of a partnership with the University of Western Sydney. The partnership has generated a research program and has developed and implemented an innovative work based learning course for the community welfare sector – the Graduate Diploma in Social Sciences (Community Services).

The paper sets out the background factors contributing to the formation of the partnership, some of the process necessary for the establishment of the course, sectoral issues which impact on students' learning within the course, some of the strategies used to respond to learning issues.

The Industry Partner

The Association of Childrens Welfare Agencies (ACWA) is the peak organisation for child welfare services in NSW. It was formed in 1958 with the combined objectives of improving the quality of services to children and young people who need to live away from their families and supporting non government agencies. In addition to training and education, ACWA is involved in policy development, lobbying, advocacy, promoting good practice and research on current issues in the child, youth & family welfare sector.

The Centre for Community Welfare Training (CCWT) is the educational arm of ACWA. CCWT was established in 1986 to provide training and education aimed at promoting quality in all community welfare services with priority to the child welfare field. CCWT provides a wide range of training and educational opportunities for workers in the sector and is the largest non-government training provider for the community sector in the country.

Background: why was the partnership formed with the University of Western Sydney?

ACWA / CCWT decided to embark on a learning partnership with the University of Western Sydney (UWS) to establish a workbased post graduate qualification for the sector for a variety of reasons. These reasons continue to drive and shape the partnership today.

1. Low levels of qualification in the industry

As a peak body, ACWA has strong concerns about the large number of unqualified and untrained people working in the sector, who are ill equipped for the demanding jobs which they are required to undertake. People in the community welfare sector may work in residential care settings, child protection, disability services, with young people who are homeless and/or have challenging behaviours, parents with alcohol and other drug issues. Frequently people in such positions hold no formal qualifications.

As well as the unqualified staff, there are concerns about the sub group of very experienced workers in the sector who are underqualified. These workers may have years of work experience and have gained important skills on the job but their formal qualifications are limited and many lack confidence in their ability to undertake formal tertiary study.

The Community Services and Health Industry Training Board (1997) concludes:

The Community Services and health industry has a lower level of qualification of its workforce than other industries has an absence of structured entry level training...and an absence of a training culture throughout the industry.

2. ACWA/CCWT's relationship with the sector

While many people in the industry may doubt their ability to undertake tertiary study at a university, it is evident that organisations and individuals working in the community welfare sector in NSW have an established relationship with ACWA/CCWT and regularly attend the professional development courses. As a

peak body ACWA believed it could build on this relationship and through partnerships with the tertiary sector, provide innovative and more accessible educational opportunities for people intimidated by traditional university courses.

3. Organisational change

The new management team which took over at ACWA/CCWT in 1997 coincided with a new organisational strategic plan. At this time the organisation was searching for new ideas to move forward to develop new and progressive educational opportunities. One way of doing this was through actively cultivating partnerships with the tertiary education sector.

At the same time that the Strategic Plan was influencing the development of partnerships and new educational ideas, there was a definite move within the organisation to develop a research program. This was aimed at informing ACWA/CCWT and the wider sector on issues of concern in child welfare and in relation to human resource issues in the community welfare industry. Two streams evolved in the ACWA/UWS partnership: education and research. Both closely informed the other. For example, the research on job satisfaction, staff morale and retention undertaken in 1998 helped to develop the Graduate Diploma course by identifying some of the key learning areas for staff. (See, *I always say I'm a plumber: significant factors in job satisfaction, staff morale and retention in children's welfare agencies*, 1998). These two streams of education and research remain central to the partnership between ACWA and UWS today and the signs are positive for further development in both areas.

4. Dominance of skills based training in the sector

In wanting to develop new educational opportunities ACWA/CCWT was reacting to the organisation and sector's training history which has been dominated by short vocational, skills based courses usually of 1 or 2 days duration. (Eg, behaviour management, counselling skills, time management, recognising and reporting child abuse, report writing, drug and alcohol issues, managing a budget.) There is a perception in the sector that if workers undertake short courses and gain specific skills this will provide a solution to problems encountered in the workplace.

While learning new skills is clearly important and ACWA/CCWT is committed to continuing this form of training, there are limitations to what these courses can achieve. We wanted to provide experienced and underqualified workers in the industry with the opportunity to develop critical analysis, reflective learning, research and project management skills, integration of theory and practice. This would also be an opportunity to think about the broader economic, social and political issues that impact on the individual and their workplace in the complex environment of the community services sector.

We were excited by the concept of the full time work based qualification because although the course is embedded in the student's workplace realities, it leads them to think and explore beyond their concrete, operational and often crisis driven daily experience. The course develops critical thinking in workers and encourages a theoretical analysis of their practice. Students also develop research skills which they can continue to use in their practice long after they have graduated.

5. University and VET partnerships

In developing the partnership with the University ACWA/CCWT adopted the view that while the Vocational Education and Training system has relevance and importance for the sector, it was essentially skill based and did not provide the opportunity for critical thinking which we believed was lacking in much of the training provision in the sector (including our own training program). The partnership with the University also made it possible to provide a higher level qualification than the VET system could provide and this was, in our view, commensurate with the complexity of the work being undertaken by many in the industry.

Nevertheless aspects of the VET system such as application of the Recognition of Prior Learning have been integrated into the Graduate Diploma. ACWA/CCWT, as a Registered Training Organisation continues to be deeply engaged in many ways in the VET system, including provision of accredited modules, support for development of appropriate industry competencies, Industry Training Advisory Board representation and industry consultation.

6. The influence of key individuals

Over and above all of these reasons, the partnership was established because of the direct approach made to ACWA by key individuals from the University who brought positive and innovative new ideas for education in the community sector. These individuals generated enthusiasm for the possibilities of work based education and gave confidence necessary for the formalisation of the partnership. Consequently the proposal for a work based Graduate Diploma in Social Sciences (Community Services) was formed and will soon commence its third year of operation.

Challenges to Implementation

The development of the Graduate Diploma did not occur without some resistance. There was initial difficulty for ACWA/CCWT in understanding the educational model of work based learning and then explaining the model to a sector used to an orthodox education system.

In order to address these concerns, to undertake more focused consultation with the sector on the proposed new course and to investigate the viability of the course, a key member of the University's staff undertook to work on secondment for 6 months at ACWA. This gave major impetus to the development of the course.

Consultations were then held with significant key groups in the sector such as the Family Support Services Association, Aboriginal child and family service agencies, Local Community Services Association, as well as with major government and non-government employers such as Department of Community Services, Department of Juvenile Justice, Anglicare and Burnside.

The effect of this process was to provide valuable information which UWS and ACWA/CCWT used in designing the course. It also served to generate interest within the sector for this new form of learning.

Support by the ACWA Board of Directors was not automatic. The Board initially raised questions about the relevance of the model to the sector and raised doubts about the take up of the course by people in the industry. Nevertheless support for the piloting of the course was given, particularly in recognition of the need to provide formal education pathways for experienced but underqualified staff in the sector.

Sectoral Issues Impacting on the Course

In its 2 years of operation the course has been received positively by participating students and employing organisations and interest from potential students continues to be strong. A number of issues have emerged which have presented challenges for the partnership team to address. These include:

1. Fees

The Graduate Diploma is not at this stage a HECS course. Students are therefore required to pay \$6000 up front. This presents the most significant barrier to students' take up of the course and submissions have been put to UWS to approve the course under the HECS Scheme. It is a particularly significant obstacle for those working in the community sector and presents important access and equity issues related to the features of the sector. These include:

- The workforce, according to the Australian Services Union, is 80% female and as with much traditional work by women, is underpaid
- The industry has a strong history of volunteerism, church and charity involvement which has kept worker's wages low.
- Employer support is difficult because many non-government organisations are small and under funded with limited or non-existent staff development budgets. Many are managed by volunteer management committees.
- Most workers are paid under the Social and Community Services (SACS) award which makes no provision for study leave. Currently students are dependant on what each workplace is prepared to accept and the value placed on training and education by management. There is wide discrepancy in this area between workplaces.
- The current award while under arbitration is unlikely to realise significant salary increases

There is a chance that limited HECS places will be available in 2001 but in the absence of this, the barrier presented by fees will remain.

2. Teaching and learning cultures in the community sector

It has been struggle for some students enrolled in the course to learn in a more formal way. Although, not a unique tertiary student experience it is perhaps more prevalent in our sector. Particular aspects of the culture within the community welfare sector which have a significant influence include:

- Many students experience some difficulty researching and carrying a project through to completion when the culture of the community welfare sector is crisis driven and under resourced.
- There is a strong verbal culture, with less emphasis on written documentation of work. Often the skills required to be a community worker emphasise good verbal communication and interpersonal skills which are critical to client focused work.
- Workers are often required to think on their feet and deal with issues as they arise. While many workers excel in this area they require considerable support to develop the written aspects of practice, to read, research and document their learning and to meet the demands of academic assessment.
- Students often have good ideas and can explain them well in a group setting or peer group but fail to translate this into the written word.
- The sector is also culturally diverse which contributes to its strength and also presents challenges in the learning process.

A challenge for the teaching team is to develop opportunities for students to develop writing and research skills alongside the critical thinking and verbal communication skills and to address issues of language and cultural diversity. All of the assessment is written and to date there are no provisions for verbal assessment or for assessment of participation in class discussion. This assessment dilemma reflects ongoing debate about the relative importance of both written and verbal communication in community work. At present the partnership team conclude that improved writing skills are a necessary technical skill needed for best practice and professional career advancement in the sector. Therefore as educators part of our role has to be to improve the written skills of students but not at the expense of undermining the areas of communication competence which are a feature of the sector. We also need to acknowledge the skills and contributions that workers make as a result of their culturally diverse experience.

3. Recognition of Prior Learning

The introduction of Recognition of Prior Learning as entry criteria provides a strong impetus for potential students to embark on tertiary study. In a sector marked by rich and diverse experience this entry criteria is one of the strengths of the Graduate Diploma. However, for some students negotiating the rigour of translating their work experiences into an academic environment is unexpectedly challenging. Some students struggle with theoretical academic texts and with the learning process involved in developing a critical consciousness. As the course proceeds during the year students find the demands of reading and thinking critically to be confronting and at times overwhelming. As a consequence the teaching team has had to integrate more deliberately a support and stewarding role with students, assisting students to engage positively with the difficult aspects of both learning and 'unlearning' which occur during the course.

4. The challenges of work based learning

There are several factors to do with students interaction with their organisational environment which affect their learning in the course:

- The intense nature of Workbased research means that often students experience more difficulty distancing themselves from their research. Students in more traditional courses can have a day off or a semester break but students in the Graduate Diploma find it difficult to separate themselves because they are emotionally involved with their workplace and the research. Our students have to go to work every day and are continually thinking, doing or being reminded of their project.
- The demands of the workplace can cut across projects. This can be either a directive from a manager to students to change direction, a withdrawal of resources for the project, or a lack of time to work on the project during work time. Many students find themselves working through role dilemmas when the outcomes of their research may include feedback which may appear critical of their employing organisations

- Welfare workers may often feel that their work is out of control. They continually deal with people at crisis points in their lives. Although crises are a normal part of the industry, workers can forget this and begin to experience this as personal failure. Instead of working with crises they can take on the powerlessness of the crisis setting and get swept away in the day to day reality. The Graduate Diploma develops students' critical and analytical skills. The course encourages students to be more than just reactive to what is happening at work by engaging in social research. Workers find this research exciting but it can also be daunting because it challenges the crisis culture of the sector and encourages students to step back and think, to become reflective practitioners.

Strategies to respond to learning issues

Several strategies have been adopted to date to address the learning issues of students in the course. These include the development of additional partnerships and greater utilisation of the peer groups:

1. Partnerships

One of the positive developments which has occurred as a result of the course was the partnership with the UWS Learning Centre. Throughout the year the Learning Centre played an invaluable role in developing students' academic skills. Together we ran a series of academic workshops in Gosford and Sydney on critical thinking, report writing, journal writing and literature reviews. Some of the material produced in 1999 has been put on the Graduate Diploma web page for the 2000 students to use.

Another emerging outcome of the Graduate Diploma is the discussions with TAFE to introduce bridging courses for community workers through TAFE Outreach. We are exploring various options which could include potential and current students preparing for, or engaged with academic study. We anticipate that the bridging course will provide advance standing into TAFE welfare courses for those students who do not meet the criteria for the Graduate Diploma.

2. Peer groups

The structure of the Graduate Diploma requires students to meet in peer groups for about 30 hours over the academic year. These small group meetings are a chance for students to discuss their projects, their journals, the course readings and any other issues arising in the conduct of their work based project. The peer groups play an important role in keeping students motivated because there is such a big gap between Block teaching sessions. They are also important as they increase workers' confidence in their knowledge and skills. Students give each other useful advice about project related and work related issues in these groups meetings. Through recording critical incidents in their learning journals and sharing stories at peer meetings students critically reflect on the nature of the industry. What they once perceived as an individual or workplace issue they recognise as occurring in other workplaces across the sector.

Nature of partnership

ACWA is involved at all levels of the planning and operation of the Graduate Diploma. As a partner in conjunction with staff from the University, ACWA/CCWT staff plan the year's program as well as each block session. ACWA /CCWT staff undertake some of the teaching in each block session, assess student's work and provide a mentoring role to students.

The crucial role which is essential for the success of the course and for student's learning is the Workbased Learning Course Co-ordinator. The Course Co-ordinator maintains regular communication with students in their workplaces, facilitates peer groups, assists students in the planning and conduct of their projects and otherwise arranges help for students undertaking the course.

The Workbased Learning Co-ordinator is employed by ACWA but operates out of both the ACWA and University sites. In this way co-ordination and communication is maintained between the two partner organisations. It also provides ACWA with a physical presence at the university and gives access to the university library and other resources.

ACWA's involvement in the course provides the organisation with another important insight into the needs and issues of the sector's workforce. This involvement helps inform ACWA/CCWT in identifying further training needs for its Professional Development Calendar or in recognising other significant issues which may require follow up through the organisation's lobbying, advocacy or research functions.

As industry partner ACWA has the role of communicating with the sector about training opportunities and to promote the Graduate Diploma course. ACWA itself is an employer of a small staff group within an industry made up of many disparate organisations of widely varying size, culture and auspice. ACWA therefore provides a single point of contact as the industry partner in the Course to represent the interests and needs of the sector and to ensure that they are taken account of in the design and operation of the course.

While ACWA has a limited number of staff for potential enrolment in the course, ACWA has demonstrated its commitment to the course as an employer by supporting and subsidising the enrolment of one staff person in the Graduate Diploma.

Conclusion

The Graduate Diploma is one of the most promising and innovative new educational opportunities to emerge for the workforce in the community welfare sector in recent times. The course is still in its developmental stages but is already demonstrating relevance particularly for those staff in our industry who have significant experience but limited formal tertiary education. The course provides opportunities for community sector workers to reflect on practice, develop project management and research skills, integrate theory with practice and develop a relevant work based project which not only contributes to their own learning but also adds value to their organisation. The course also adds confidence by affirming workers expertise and provides a high level qualification.

The Graduate Diploma is dependent on maintenance of a strong partnership between the industry body (ACWA) and the university (UWS). As the industry partner there is a strong sense of enrichment and challenge in being part of a new educational initiative for an industry which still faces many challenges in achieving and sustaining a highly skilled workforce.

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WORKBASED LEARNING AND THE ACADEMIC WORKPLACE

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Preamble

Prior to our paper, our colleagues from the Association of Childrens Welfare Agencies and the Centre for Community Welfare Training and from the Workbased Learning Unit (University of Western Sydney) have presented two other papers about our collaborate workbased learning projects. In this final paper in a series of three, we have chosen to focus on the issues that have confronted us as academics as we developed workbased learning degrees in partnership with industry peak bodies. In the context of these partnerships, much of our work within the university is invisible, yet critical as the vehicle through which workbased learning has become possible. For this reason we focus on our work within the university, rather than within industry partnerships or with students. This paper is therefore an aspect of our own workbased learning.

Introduction

The Centre for Critical Social Pedagogy (CCriSP) in the School of Applied Social and Human Services at the University of Western Sydney began working in the areas of partnership development, workbased learning (WBL) and exploring the links between university study and organisational, community and regional development in the early Nineties. Since then, the connections between 'work' and 'learning' have been explored through a range of strategies¹, including a suite of post-graduate workbased learning degree programs².

Although workbased learning appears to have been adopted by some proponents as a conceptual framework, it is not the conceptual framework for our work. Rather it is one methodology among many that we have adopted to explore broad educational, political and social justice issues with learners. Underpinning the learning strategies that we use lies a central commitment to the creative exploration of critical social pedagogy, in this case through post-graduate workbased degrees.

This commitment has meant that as learners in our post-graduate degrees engage in workbased learning, so too have we, as academics, engaged in learning in our workplace- the university. As we have done so, like students we have grappled with numerous forces that sometimes 'push and shove' us in certain ways as we attempt to implement various innovative practices. Forming grounded theories about these forces characterised part of our learning; experimenting with action scenarios over time characterised another. In this paper, we consider critical social pedagogy as the framework for workbased learning, discuss the forces that 'push and shove' our own workbased practices, and provide case examples of how we attempted to resolve these forces through action. Our paper has two broad aims. At one level, we want to make a contribution to the development of knowledge and understanding about workbased learning as a contemporary aspect of adult learning. At another level, we wish to use our own experience as working academics to consider the way in which organisational actors can make decisions that shape their organisational context. For us, this context is a modern regional university. Because we are academics engaged in academic work, we begin our paper with a discussion of the theory that informs our work.

Critical social pedagogy and street level dualisms

Critical social pedagogy is a conceptual framework within the social sciences derived from the German concept of Sozialpaedagogik (see for example Mueller 1978, 1985). It is a field of study that is concerned with the interplay of individuals, organisations, communities and societies. It applies an inter-disciplinary action focus to education, research and development with the aim to balance power inequities and economic, social and political disadvantage (Wagner 2000). In particular it is concerned with the inherent connectivity between learning, social actions and socially just futures. 'Social actions' may be located within a workplace, a community or a society (Childs 2000). As we develop and implement workbased learning our concerns about the exploitation of workers, the development of critical and reflective practices, and the need to acknowledge and confront the worst excesses of capitalism (Gee 1996) remain firmly in the foreground. Adult learning proponents have long been concerned with social and political aspects of learning rather than merely its technical usefulness (see for example Dewey 1916, 1938, Freire 1972, 1974). The approaches we have taken to adult learning, including workbased learning, share many of these historic concerns. Within

¹ These strategies have included work-related learning, project-based learning, work-focussed learning, scenario-based learning, a combination of on- and off-the-job learning, and learning that defines 'work' as meaningful labour regardless of its material base.

² Graduate Diploma of Social Sciences (Community Studies), Graduate Diploma of Social Sciences (Community Services), Graduate Diploma of Social Sciences (Educational Reform).

this framework, our workbased learning practice takes on a particular appearance and moves learners in particular directions.

Whilst critical social pedagogy provides the framework for our actions, at the 'street level' of the university the tensions we face as organisational actors are often prescribed by three key relationships that we describe as street level dualisms: the relationships between education and the economy, theory and practice and education and training. These relationships are briefly discussed below followed by a comment about our experience of each relationship in our workplace.

The relationship between education and the economy

The relationships between education and the economy have been publicly debated from different viewpoints since the advent of mass education (for example Dewey 1916, Illich & Verne 1976, Gee 1994). By and large, since the early 20th century, education has been seen as a vehicle to deliver economic and socio-political outcomes. Dewey (1916) first identified contradictions between the principles of emerging democratic societies and classical, elitist education on one side, and the increasing demand for technically educated labour on the other. Embracing a curriculum that delivered technical skills and knowledge, he also argued constantly and consistently for the development of 'critical and inquisitive minds' as a major role of education in the (then) new century, if that education was not only to deliver economic outcomes but to deliver the conscious and active democratic citizen as well (Dewey 1916). Whilst Dewey was concerned with industrial democracy, current demands for more economically viable education outputs are driven by a different ideology.

In the last 15 years education and training globally has come under mounting pressure to produce more economically viable *outputs* ('job readiness') and to develop and deliver *products* that generate income for education providers in order to supplement shrinking public resources. Increasingly, education is treated as a commodity that enhances individuals' chances in a competitive labour market and can be bought and sold as personal property. As a consequence, education innovation is seen as packaging and modularising existing programs and turning them into portable, flexible, (electronically) deliverable goods.

The critique of higher education as economically irrelevant and not producing for the labour market seems reasonable and appropriate for some within the academy. Under financial pressure and called to account for their 'output', the demand for greater utility in university education is being heeded by some institutions. A diverse range of responses is being developed, some embrace commodification, others diversify their curriculum and others again reshape fundamentally their approach to the education and training divide. In this context some universities are experimenting with workbased learning models of all shapes and sizes.

We have found that the way in which a particular university conceptualises the relationship between education and the economy at the corporate level can shape the spaces in which innovative approaches can emerge. We have experienced three different corporate visions: that university education transcends the economy; that access to university education and economic and social participation must be profitable; that university education provides universal education and access to economic and social participation. Each corporate vision created new dilemmas for our practices and we have had to reinvent the way we package and speak about our practices in the public domain.

The relationship of theory and practice in education processes

Historically, the quest for an integration of theory and practice in education strongly reflected the increasing demands of industrialised societies to qualify their members to be able to apply science and technology in the production processes. As industrialised work evolved into more complex activities, the generally educated high school and university graduate was no longer seen to be capable of meeting the demands of the labor market, especially and the higher end of the qualification spectrum. Today, the integration of theory and practice is argued as a requirement of the new, information based economy that intricately links science, technology, knowledge production and profit.

A historical exploration of the theory and practice divide reveals a fundamental controversy between different philosophical stances on the origins and development of knowledge. Although a wider range of arguments exist, two main positions are historically juxtaposed in the education debate, the idealist view that knowledge exists independently of concrete experience and purpose (Plato, Aristotle) and the materialist view of an inseparable dialectic between material basis and consciousness (K.Marx & F.Engels). Both views continue to influence current debates of the relative value of different education processes in academic and vocational institutions of learning.

We have found a wide range of responses as organisational actors within the institution grapple with workbased learning in differing ways depending on their function. Some grapple with workbased learning as a course with integrated learning outcomes, others with innovative assessment approaches, learning unrelated to class attendance or semester time-lines, and learning that is applied and based on theory formation rather than theory testing. Despite the rich tradition of debate about theory and practice that precedes workbased learning we continue to encounter the simplistic and positivist question 'But is it theoretical enough?'

The education and training dualism

Hand in hand with these differing positions on the formation of knowledge is a clear dualism of education to work and general education mirroring the separation of theory and practice. Institutionally, the separation of universities from vocational education and training (VET) systems and streaming in secondary schools represents the education and training dualism. This dualism is a reflection of complex social arrangements

... the source of this dualism [lies] in the division of society into a class laboring with their muscles for material sustenance and a class which, relieved from economic pressure devotes itself to the arts of social expression and social direction (Dewey 1916, 336).

The division of academic and vocational curricula continues to provide the institutional base for the reproduction of social divisions, of privilege and disadvantage be they class, gender or race based. It directly reinforces the different value, type and accessibility of education and training and their social and economic recompense.

These backgrounds and contexts position WBL not only as educational technology and method but as a site of struggle between contradictory economic, social and political interests and differing views on the role of learning and education in contemporary society. It is our argument that these tensions and contradictions impact on the implementation of WBL regardless of place and time. Invariably, they require complex management strategies if WBL is to balance the benefits, losses, inequities and disadvantages inherent in attempts to cross traditional boundaries between academic and vocational education.

We have found that many academics continue to express the notion that 'applied' learning represents 'training' and theoretical learning represents 'education' - the old 'hand versus head' division of industrial forms of labour. This way of seeing workbased learning often relegates it to a lesser and weaker form of learning, and as a 'watering down' of the true nature of the university. Workbased learning can be seen as less rigorous, students less intelligent, the course as less prestigious and less 'real' by students as well as colleagues. The training and education dualism can lead students to ask 'But is this a real degree?' and other academics to comment 'This is a mickey mouse qualification'.

Resolving the 'push and shove'

At the 'street level' our practices are pushed and shoved by the way in which social actors in our organisation see and act upon the traditions, policies and practices that emerge, in part, out of the relationships between education and the economy, theory and practice, education and training. As academics - who are at the same time organisational actors - we experiment to find ways to resolve this 'push and shove' which continually threatens to reinstate the status quo and disable innovation. Although we have adopted different principles at different times during the past decade as we engaged in this struggle, during the past two years two key approaches have proved effective.

Firstly, we have seen ourselves as organisational actors attempting to forge change within a corporate entity. This allows us to step aside from the constraints imposed by the institution as well as the traps posed by the dualisms discussed above, in order that we might develop organisational solutions. In part, we base our approach to organisational development on the work of Lewin (1951). Lewin's work allows us to recognise the interdependence of individual, structural and cultural factors in organisations. Using an analysis of the status quo as 'quasi-stationary equilibrium' (QSE) (166) we are able to understand our developmental role as balancing different interests, operational imperatives, structures and management models.

In addition, rather than seeing the university as amorphous and unchallengeable, we are able to identify the spaces in which change is possible by adopting a 'force field analysis' (38, 62). This provides us with a tool whereby we can identify the relationship between internal and external factors impacting on the organisation, to understand these factors as varying in strength, and to speculate on the nature of these forces as 'driving' or 'restraining' change. QSE and 'force field analysis' provide us, as organisational actors, with useful tools to analyse and develop strategies of change without feeling overwhelmed by the complexity of issues, or resorting to status quo behaviour.

Secondly, we have adopted the view that as we continue to resolve street level 'push and shove' we would maintain our commitment to 'sustainable and defensible educational practices' (Childs & Wagner 2000). We continue to draw on the rich epistemological history that informed our work as adult educators, continue to see our role as organisational actors who have a commitment to critical social pedagogy in practice. In a practical sense this has meant that we were prepared to break gatekeeping rules, act as advocates for social justice, fight for access and equity, and adopt challenging approaches to the stranglehold and mythological power of 'academic rigour'.

Whilst the increasing commodification of education appears to be unstoppable, we are of the view that we can apply strategies and mechanisms that protect students and their industry from exploitation and therefore enhance our chance to continue providing education to the sector. The long-term ability to provide education programs to the community services industry rests on our ability to provide a cost effective, accessible, equitable and useful qualification. Obviously, these intentions are in tension some of the time and our role is to negotiate the best outcomes for students within and sometimes challenging existing boundaries. Sustainability and defensibility refer to economic, pedagogical and equity criteria that underpin our practice.

In using the institutional 'freedom' created by pressures to change the economic base of universities, different opportunities and dilemmas (Wagner, van Reyk & Spence 2000). Most innovations are judged on economic grounds, ie their ability to generate income. In terms of course development this implies fee-paying programs. Due to restrictions in the number of government funded student places, new courses, in most cases, can only be offered if they are self-funding. Obvious dilemmas are associated with this. For example, fee paying courses privilege students from wealthy backgrounds or from corporations who fund the course. The 'purchaser' can manipulate course content; courses can target 'wealthy' industries and professions (eg business and marketing). Another hurdle is created by university policy to not allow undergraduate fee paying courses. Whilst this is an equity policy and needs to be supported it requires creativity and flexibility to develop a post-graduate program that is not exclusive in itself.

Whilst we have not been able to resolve all the dilemmas we have attempted to maintain sustainable and defensible practices by using four key strategies. These strategies, by and large, address

- financial concerns and value –for- money considerations
- access issues
- questions of credibility
- the development of critical and emancipatory practice grounded in instrumental and interpretive learning.

The remainder of this paper will focus on how we resolve the 'push and shove' using these four strategies. A fifth strategy applies to the actual process design and will not be detailed here.

Financial Strategies – From 'can't be done' to 'yes, we can'

Universities resemble large bureaucracies where decisions are processed through several committees and administrative knowledge is obscured by procedure. Traditionally, academics know very little of budgeting and accounting procedures and systems within their institution. The requisite roles and decisions are allocated to administrative officers and managing academics such as deans and departmental heads. These factors combine to produce a 'can't be done' approach in the first instance whenever changes to the existing practices are required. In order to maintain sustainable and defensible financial practices the Centre needed to adopt a developmental attitude to its own institution. On one side we needed to make ourselves knowledgeable in financial administration and on the other, we needed to develop networks with administrative colleagues who could provide information and advice and support change processes where possible. In particular, access to information about policy loopholes and anticipated resistance and to sympathetic administrative personnel was crucial to the success of our endeavours. This process was made easier by an overall restructure then under way at UWS Nepean that put the whole organisation in a state of flux and led to a substantial decentralisation of decision-making with an accompanying increase in transparency and accountability across the board. Slowly, significant changes were emerging in the relationships between administrative and academic staff that turned the 'can't be done' into a 'can do' climate. Sadly, this process is now in reverse. However, as a result of the Centre's activities within the overall organisational changes, we were able to establish the following financial strategies.

Keep fees as low as possible:

The cost of a course can be calculated in various ways. Although definite funding formulae exist within the university, exemptions and reductions can be attempted. By spending most of the income on course delivery,

the profit margin is reduced, as is the cost to students. This requires sound policy and strategic knowledge and good internal networks. In a climate of paucity of resources within higher education, sacrificing potential profit requires a clear commitment to accessibility of higher education.

Negotiate variable funding models:

In order to ease the financial burden on individual students, negotiations with employers often result in some support being provided by them. This can take the form of a percentage of fees being paid, students being granted special leave for block study sessions or other allowances being provided. The workbased learning approach allows us to demonstrate utility to employers. They can see a direct organisational benefit from student research and development projects and are therefore more willing to provide support. However, students who have part or all of their fees paid by employers can encounter a need to negotiate their interests with those of the employer. This process assists in the development of an organisational and not just an individual identity of the student.

Access Strategies – From ‘not manufactured here’ to ‘jumping fences’

It is a truism that access to higher education is distributed unevenly and the introduction of fee-paying courses adds to the concerns about access and equity for student groups unable to afford such programs. On the other hand, the introduction of workbased learning models instantly challenges the traditional notion of hierarchies of knowledge and associated exclusive practices in higher education. Once work is accepted as curriculum in these courses, questions arise about the value of previous learning at work and their recognition within the academy.

There are many hurdles and dilemmas in this respect and any notion of equivalence of academic and non-academic learning goes to the heart of academic identity and purpose and requires a shift in worldviews. In university-wide discussions about access and equity strategies, we had come to understand the traditional viewpoints of academic rigour, the purpose of liberal education and the interests vested in the status quo. In combination, they reflected the ‘not manufactured here’ camp in the discussions on policies and procedures for academic credit transfer and the recognition of prior learning. On the other hand, the pressure to compete for students, the advent of lifelong learning discourses and a critical appraisal of academic traditions softened institutional resistance and led to some flexibility. However, despite different strategies and programs to recruit ‘non-traditional’ students, anecdotal evidence suggested high drop out and non-completion rates amongst these students. On further investigation we found, that one of the contributing factors was easily changed. Whilst recruiting ‘non-traditional students’ into some programs, the programs had made no changes in teaching, learning or assessment strategies to cater for this student body, thus reinforcing the notion, that university is not for the uninitiated.

The Centre’s approach to the development of access strategies within the university was twofold. Initially, we developed and applied localised RPL policies and procedures within one undergraduate degree, supported by appropriate teaching, learning and assessment strategies using the same strategies as mentioned earlier, locating loopholes and using networks. (Childs & Wagner 1997). Secondly, we participated in university wide initiatives to change and develop RPL policies across the board. These initiatives led to our ability to transfer these practices to other undergraduate and to postgraduate degrees.

Recognition of prior learning (RPL):

The Centre is at the forefront of RPL developments in the Australian higher education landscape. The RPL policy adopted by the university is based on the Centre’s work (Childs & Thompson 2000) and accepts equivalence of learning outcomes regardless of types of learning. Underpinning our RPL policy and practices is a commitment to equity and accessibility in education, with the aim to recruit into rather than exclude from universities non-traditional student bodies. In the case of the community services industry for example, it is well documented that workers develop expertise by way of work experience and professional practice without certified or accredited training programs. Often, individuals bring a mixture of formal and informal training and education experiences to their work that goes unrecognised in traditional university degrees. The Centre assesses individuals on the basis of all their experience. Students can access the postgraduate degree from a combination of backgrounds including but not necessarily with an undergraduate degree.

Teaching, learning and assessment strategies

Our problem posing approach based on Freire’s seminal work (1972) incorporates a set of practice guiding principles for the design and implementation of education processes. This set, defined as spectra for decision-making (Wagner & Traucki 1985) and consists of a) process versus product orientation b) investigation versus prescription c) generative themes versus issues d) critical thinking versus mystification. These

principles in turn lead to the following micro strategies for teaching, learning and assessment in our workbased learning practice.

Learning outcomes are integrated across traditional subject boundaries. The curriculum is interdisciplinary and flexible in response to students project requirements. Assessment is based on a portfolio of a learning diary, project rationale and development, project outcomes and other relevant tasks. Theory formation proceeds from and is grounded in students' work experience and exploration of their workplaces. Theoretical inputs are based around the research projects and core subjects of the course focus on generic content areas, applicable to all workplaces, such as context, policy and program issues in the industry, research methods, work and research ethics. Peer group learning provides a venue for experience exchange and debriefing and a workbased learning co-ordinator supports individual students in their project needs.

Credibility Strategies – From 'have we got a deal for you' to 'how can we co-produce knowledge'

The credibility of workbased degrees within the university and the relevant industry is necessary to their utility to the student and the courses' long term survival. The credibility of a workbased degree within the university rests in its conformity with its standards. Credibility within the industry rests with its responsiveness to the industry's requirements. The university's standards are defined and governed by course development, approval and review policies and procedures and the presumed competence of academics in their field of expertise and as teachers. For industry, requirements vary but usually relate to utility and applicability of the course and some obvious contribution to the workplace. These two sets of criteria are not necessarily complimentary and contradictions exist that can create difficulties for the academics positioned in between the two organisational imperatives. In most cases both sets of criteria need to be developed, changed or challenged. This involves an educational process for the university and the industry partner about each others' cultures in order to better identify the negotiables and non-negotiables. In our experience, the better the understanding and the stronger the relationship is the more negotiables can be identified and the more flexibility can be achieved. Our commitment to the integration of theory and practice requires modesty on our behalf and the acknowledgement that industry partners hold knowledge often undervalued in partnerships. As organisational actors we needed to convince the university that partnerships developed at the 'street level' rather than by senior managers can result in complex relationships that transcend the ubiquitous provider/purchaser model. 'Deep' partnerships that meet the requirements of credibility in the industry as well as the university aim at the co-production of knowledge between both partners, informing course development, curriculum development and design and negotiating academic with workplace rigour.

To secure the university's support, we needed to formalise and share our partnerships by way of departmental visits, meetings with senior managers, the signing of memoranda of understanding, and so forth. Often, these activities, when undertaken by non-managing academics are on the borderline of policy compliance and we have taken numerous risks in the process. However, in most instances, once an initiative was under way we encountered little resistance to the respective partnerships, although the response time by the administrative powers could be frustratingly slow.

Develop university/industry partnerships

In 'deep' partnerships we share the development, delivery and assessment between university and industry partner(s) and it is those types of partnerships that, in our experience, can meet credibility requirements for both sectors.

For example, the Graduate Diploma in Social Sciences (Community Services) is 'owned' and delivered jointly by the university and the Association of Childrens Welfare Agencies (ACWA). ACWA is a peak body representing its member organisations and individuals but is not an employer organisations. ACWA's training arm, the Centre for Community Welfare Training (CCWT) is the largest training provider to the industry in Australia. The partnership was established in 1997 and includes research, education and training and policy development. The partnership between a higher education provider and a peak organisation demonstrates a commitment to the integration of theory and practice in concrete terms. In practice members of both organisations operate as colleagues in the degree and share supervision and teaching responsibilities. A workbased learning co-ordinator is positioned across both organisations.

Design industry wide rather than employer specific programs

The degree is designed for and accessible to the whole industry and not accountable to a single employer. This enhances its credibility in university terms, where employer programs are often seen as 'Mickey Mouse' and not rigorous. Given that there is no single employer impacting on course content or delivery, decisions about curriculum and learning process are guided by academics and their partners.

To sustain a fee paying, workbased program in an impoverished industry, the benefits need to accrue to all sides involved. Contributions are required from all levels of the organisations by way of collaboration with the student/worker and by way of support for the project. The more tangible outcomes can be delivered the more support is available in the workplace. Identifying and delivering projects that benefit the organisation as a whole and that contribute to improvements in its activities forms part of the course requirements.

These strategies form some of the organisational and material base of the program. In the following we will address the institutional 'push and shove' in relation to pedagogical and philosophical issues. Pedagogical and philosophical issues in this context refer mostly to teaching and learning models and we have elaborated on these in detail elsewhere (Childs & Wagner 2000). In the context of this paper we will address some of the institutional constraints, hurdles and barriers.

Developing critical and emancipatory practice grounded in instrumental and interpretive learning

The integration of vocational and academic learning and of theory and practice that underpins the Centre's workbased practice requires the development of practical, analytical and critical skills and knowledge. The Centre's foundation in critical social pedagogy as outlined earlier gives direction to the practical, analytical and critical knowledge we try to develop. We base our educational practice predominantly on the works of Freire (1972, 1974) and Habermas (1971, 1984). It is not our intention to enter into a detailed exploration of their work here. However in the context of our practice we interpret these works in different ways. For example, Freire's (1974) concern for liberating educational praxis underpins much of our educational goal setting and design of learning processes. Habermas' typology of 'knowledge generating human interests' (1971) and its practical implications are useful to illustrate the type of educational processes we see as appropriate.

The typology describes three categories of interest in the search for and development of knowledge, instrumental-technical, interpretive and critical-emancipatory. Simplified these can be expressed as 'know-how', 'know-what' and 'know-why' but also have a directed action component added.

The Centre experiments with different strategies to develop professional skills (know-how), analytic competence (know-what) and critical knowledge (know-why). The strategies are emergent and change and develop almost weekly.

The application of these principles is at odds with a number of traditions within the university. The segmentation of courses into distinct 'subjects', the segmentation of knowledge by disciplines and the assumption of a hierarchy of knowledge all conspire to make integrative approaches to learning and work difficult. These traditions have been ossified in administrative systems that are difficult to access, not always rational and often incomprehensible, even to the people responsible for their application. In addition, the academic notion of expertise in distinct areas of study, as established by one's PhD and teaching history, requires consultative processes that occasionally sabotage any development. As organisational actors we had to invent strategies to deal with each of these hurdles in creative ways. In particular, where rationality does not solve the problem, political manoeuvring, social relationship building, and sometimes deviousness are required.

Conclusion

Reflecting on our role as organisational actors and engaged in our own workbased learning, we have highlighted some of the issues facing innovators in a university environment and our attempts to overcome difficulties. The many tensions, contradictions and limitations arising in a program that fits non-traditional education models into a traditional education system are apparent in the list of strategies that we need to develop in order to maintain the program. From our perspective, the implementation of workbased learning encouraged by universities as fundraising activity only makes sense and can be sustained and defended, if universities are willing to critically reflect on their traditions and to find new ways of addressing the three street level dualisms described in this paper. There is no doubt in our minds that the relationship between education and the economy, the integration of theory and practice and the education and training dualism need to be revisited and redefined.

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LIFELONG LEARNING AS MASS EDUCATION

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The Adult Education Research Project

Adult education is generally dominated by discourses of emancipation or similar humanistic ideals. This is often so when adult education is conceived from the view of the policy-makers or planners, one of the most authoritative and recent examples being the OECD report "Lifelong Learning for All (OECD 1996), or of teachers and educational theorists who are drawn towards such key concepts as self-direction (e.g. Knowles 1975, Brookfield 1985), transformative learning (Mezirow 1991), critical thinking (Brookfield 1987, Mezirow et al 1990), and social responsibility (Wildemeersch et al 1998).

Other researchers, using a biographical approach to adult education, tend to focus on how people in their adulthood realise an old dream when they return to educational institutions. We often see life histories where adult education of various kinds is said to be a turning point in people's lives. This phenomenon is often interpreted as the realisation of "unlived lives" as expressed in a popular phrase from biographical research (e.g. Alheit 1995, Dausien 1998).

But does adult education always play such an important and significant role for the participants, also for the majority of people with a brief or no educational background after their basic schooling?

In the 'Adult Education Research Project' (Illeris 1998, 2000), which is financed by the Danish Ministry of Education and labour market authorities in cooperation with Roskilde University, we are dealing with the broad adult education systems which mainly serve adults with brief schooling and unemployed adults. These systems have expanded rapidly during the last eight years, partly as a consequence of the government's active labour market policy, but to some extent also because a growing number of adults are attracted by or feel it necessary to take an interest in adult education.

In the project we have followed selected courses in the three educational systems that are mainly oriented towards this group of participants, namely the "Adult Vocational Training" (AMU) system, the "Adult Education Centres" (VUC – offering secondary school level courses and exams for adults), and the "Day High Schools" (serving mainly unemployed adults who need to start a new career). We have observed the teaching and daily life, and interviewed participants in single and group interviews, and in doing so we have consistently sought to look at adult education from the perspective of the participants.

Ambivalence and strategies

What we have found is basically that most of these adults approach education in very ambivalent ways. As adult education has become a major concern of labour market policy the majority of the participants enter the programmes because they are more or less forced to do so. They may be unemployed persons who have to be active in some kind of formal job or training course in order to continue receiving unemployment benefit (the government activating programme), or they may be workers who take courses because it is more or less directly demanded of them in order to keep their jobs. Thus "lifelong education" has become a reality for a larger group of adults including both genders and all classes, and also to a great extent people with a working-class background. The majority of these participants are not just attending adult education because of an inner drive, but mainly out of necessity or because of direct requirements or being forced to do so. From our observations and interviews it can be derived that more or less everybody who today is 30 years old or more has a deeply embedded notion that education, apart from necessary supplementary training when, for instance, new technology is introduced, is something that is related to childhood and adolescence. Adult education of a more prolonged and profound character is consequently somehow experienced as degrading and a threat to the status of adulthood. To be an adult means being able to conduct one's own life and make one's own living, and not being pushed back to school and to the status of a pupil.

But at the same time most people do want to keep their jobs or improve their possibilities of getting one and, at least up to their late 40s and usually up to their mid 50s, they are generally open to learning if this does not require rejecting what they have already committed themselves to. So very often when adults enter longer and/or re-qualifying courses they are very sceptical and very expectant at one and the same time. They hope for and demand enrichment and involvement but also fear being humiliated or challenged above the level of

their personal thresholds. They are sensitive and vulnerable. While they hope for help and support in a critical life situation, they doubt that it is possible. They are ambivalent in a way that splits them apart. These circumstances lead to participants telling about their reasons for being involved in adult education in most contradictory ways. On the one hand they emphasise that they have chosen to start an educational programme because they want to learn something; on the other hand they are only attending the courses because they have to do something. In some stories the social motives are dominant, but they are always mingled with other motives for qualification or personal development and with elements of passive resistance and perplexity. Motivations are rarely straightforwardly positive or negative but seem to be a mixture of social, personal and/or technical elements with a focus on the concrete skills that the adults expect to gain from the programmes they participate in. At the same time there is a great deal of desperation or resignation in their statements. And when we ask them more about their everyday lives and their life histories (especially about the values that they have been orienting their lives towards so far), it becomes evident that their actual approach to adult education is very ambivalent and even confused.

This is also the reason why we prefer to use the phrase "educational strategies" rather than motives. In employing this terminology we want to emphasise that adults approach educational programmes under very contradictory circumstances and that these circumstances produce particular attitudes and ways of handling their participation which make it possible for them to cope with the current situation.

The educational strategies are not just visible to us as researchers when we interview people about their reasons for participating in adult education. They are also active in the classrooms, influencing the ways in which participants interact when they meet in the institutions. The strategies are formed as a result of the meeting and collision of the participants' approaches with the norms, traditions, culture and demands of the different institutions.

Adults and identity

The mixed attitudes towards adult education are not just produced by the outward elements of economic power and control that compel our research subjects to participate in adult education. The broader social and economic conditions these participants are currently facing have consequences for their very identities.

For children and young people it is an integral part of their lives that they are developing and therefore have to learn new things all the time. But adults face the consequences of modernity from a different point. The adults that enter the educational institutions have typically had stable jobs and family-lives, but some or all of this has changed. This means that the identities they have developed during a long life are also challenged. What they conceived of as stable factors in their lives no longer exist. They have to find new life orientations, but in contrast to younger people they have to develop these new orientations on top of some they have already established. Thus for them the development of a new identity simultaneously means discarding parts of the old identity, and the latter is often a process that is far more difficult and causes much more pain than the former.

In our research project we see many adults who try to use elements of their old identity under circumstances where it no longer fits. They talk about their old trade and the qualifications needed there, etc. In adult education today it is something else that matters, but what?

The problems of identity are part of the baggage participants bring with them into the adult education institutions. The breakdown of biographical continuity – the loss of a job, of family-relations, and maybe of political, cultural, moral or religious orientations – means that they are very uncertain of the future and of their social identity. Their former experience does not seem to be relevant. At the same time the discourse of the possibility of modernity also dominates the educational institutions. When they were young they did not expect everything to be possible – they just got married, got a job and generally did as they were expected to do. Now they are suddenly told that everything is possible and that it is their own responsibility to succeed. But everything is not possible and they are not sure what the purpose of education is when the prospects of getting a new job are extremely doubtful. Are they just being kept busy at the educational institutions because they are not needed in the labour market or are they actually qualifying themselves for a steady job?

In the institutions they are talked to as responsible adults who are able to make their own decisions about what is relevant for them to do at the same time as being placed in the position of vulnerable children who have to be taken care of and not over-challenged.

On their way the participants learn to play the role of interested learners but they are still very uncertain about the rationality and sense of the educational project. What happens in the adult educational institutions cannot be understood without realising that questioning the fundamental meaning of the project is always

present. Adult education can very often be characterised as the compulsion to develop without a clear perspective. (At this point we must stress that the situation is much different for young adults in their early 20s – Simonsen 2000).

The educational strategies

The strategies that the adults develop to deal with the contradictions of the situation and the lack of a clear objective of the courses are not always conscious strategies which the participants and teachers are aware of as mechanisms for coping. They derive from our interpretations of the interactions in the classrooms in combination with our awareness of the ambivalence that characterises the participants' approaches to adult education. At the general level there are two dominating strategies which are somewhat contradictory in their ways but not more so than that it is possible to use both strategies at the same time:

Usefulness as a strategy

The "positive" general strategy is for the single participant to find out what may be personally useful in a course and concentrate on that in order to maximise the personal outcome. It is obvious that the vocational schools and the day high schools offer elements of practical qualification which are generally useful in daily life - and also in working life if one should be so lucky as to get a job. In the compensatory school programmes, such elements may immediately be found in foreign language courses and to some extent in other subjects such as cultural and social studies, but the feeling that the content of the subjects is useful primarily in relation to examinations, and only to a very limited extent in relation to life outside school is very widespread and dominant.

Instrumentalism as a strategy

The "negative" general strategy is that of instrumentalism, i.e. getting through as easily as possible. Its application is fundamentally dependent on the formal sanctions. In the vocational courses where presence is the main criterion and only two days of absence are allowed, the strategy will just be to be there. But actually most people cannot stand not to be active in some way, and therefore the substrategies of complaints and humour (see later) are very widespread here. In the day high school some of the participants are very focused on the possibility of passing computer tests. Others just have to complete the course in a satisfactory way which means that they have to be well-reputed by the staff and management in order to be recommended for another course, and this reputation is primarily gained by being socially active and obliging. In the compensatory courses everything is concentrated on passing the examinations, but in order to go to examination in what is called a "limited syllabus" - which is for most participants a definite condition - one may not exceed 15 pct. absence from the lessons. Thus, this criterion becomes very important and creates much dissatisfaction because it is experienced as being contradictory to relying on the participants to be adult and self-governing.

In addition to the two general strategies we have found a variety of substrategies concentrated on how to get through the long and sometimes boring days in the schools. The most widespread of these strategies are the following:

Complaints and passivity as a strategy

The obvious grumbling and complaining about different things in the schools and teaching is a very visible form of reaction to an unsatisfactory situation. The participants complain about a lot of things - e.g. that the teacher is too authoritarian or too little authoritarian, that the other participants are disruptive or just not good enough, that the rooms or the facilities are old-fashioned etc. While on the one hand these complaints have very precise grounds, on the other hand they also reflect the participants' uncertainty as to whether they can learn what they are taught and what the purpose of the whole project really is. At the vocational schools, for example, the participants try to influence the content of the course in the direction of something to which they can immediately relate. When this does not happen they first complain a lot, but during the course they develop a strategy of resignation and only passively attend the courses because they have to stay in order to get their certificate.

Humour and irony as a strategy

The use of humour and irony is another strategy the participants apply to get through the long school days. While complaining overtly reflects displeasure, humour is a more indirect means of expressing frustration, irritation, uncertainty and a feeling of inadequacy. Humour may often be used to express pent-up emotions that it may be difficult to formulate directly. In a psychoanalytical understanding, humour is regarded as a

means of expressing repressed libidinal or aggressive feelings in an acceptable way. At the vocational schools most participants feel bored and in the interviews they openly admit that they make jokes and witty remarks to break the monotony of the teaching, but at the same time this compounds and re-enforces the experience of wasting time. At the day high schools humour and disruptive remarks also occur, but here the irony is often turned against the participants themselves. The underlying message is that the participants feel too silly or incompetent to pick up the new qualifications (e.g. computer qualifications) while simultaneously being seriously in doubt whether they will ever have a possibility to use what they learn in a job situation.

Dynamism as a strategy

For many of the participants in adult education, the aim of their efforts is so vague and far away that their participation appears meaningless when they come to think about it more deeply, as often happens during the interviews. One way of handling such uncertainty in everyday life is to make the activities dynamic by ascribing to them a meaning and importance that can support and legitimise engagement. The reason why the examinations at the compensatory schools are held in such high esteem – in contrast to the ordinary secondary school where examinations are usually hated – is that they offer legitimisation for the activities that the content itself does not always provide. At the day high schools the social community spirit may have the same effect, for instance when it becomes possible to use the computers as a means of communicating by e-mail both inside and outside the institution.

Perfectionism as a strategy

Another way of getting through is to commit oneself to selected elements of the content and try to become perfect in limited areas or functions. This strategy is very easy to adopt in computer courses, the computers offering lots of possibilities where a certain type of task can be repeated again and again until one feels absolutely competent. It is remarkable that participants clearly prefer to spend the ample time that is available in this way and not in throwing themselves into the endless new possibilities that the computers also offer. Another way of practising this strategy is to note down carefully and conscientiously everything the teacher says.

Adult education: Storage and control, job preparation or emancipation?

In the preceding we have tried to illustrate how adults are ambivalent in their attitudes to adult education, how adult education has become a part of labour market policy, how it affects the vulnerable identities of adults in uncertain life situations, and how adults react by developing various strategies to cope with the concrete situations but also to protect themselves and maintain their self respect.

We started the paper by questioning the emancipatory power of adult education, especially in relation to the broad layers of adults with brief schooling who today comprise the majority of adult education participants, and we have further described the background to this questioning. What, then, are the necessary conditions that would make it possible for the participants to learn something of importance and develop themselves in a direction which could be termed emancipatory?

The first and fundamental condition is no doubt that the problematic situations and ambivalence of the adults in question are recognised and taken seriously. They are certainly not showing up in the schools just to improve and develop themselves and to realise old dreams of knowledge and understanding. They are fundamentally sceptical – school is not a positively valued word to them – but almost always there is also a vague element of hope in their attitudes, hope for some sort of help and support to get out of the problematic and unsatisfactory situation that has forced them to go back to school again.

Any emancipatory endeavour must necessarily try to satisfy and link up with such elements of hope. And at the core of these elements is nearly always a burning, but hardly expressible wish to get some work, maybe only part-time, maybe not very enriching, but just about any meaningful job that makes it possible to feel like an acceptable member of society once more. (Again we must stress that the situation is quite different for the youngest adults who do not feel it degrading and humiliating to live on public benefits to the same extent).

Whether one likes it or not adult education has become an integrated part of labour market policy, and the participants clearly also regard it as such. So any emancipatory notion must be combined with serious endeavours to procure realistic job possibilities for the adult students. However, this is not a question of pedagogics or educational strategies; it is a political issue of very high priority in today's welfare societies.

Therefore educators, and especially educators with emancipatory notions and orientations, cannot hope to pursue their goals solely by good and progressive educational activities. They will have to inform and to

agitate about the everyday conditions of adult education and the situations and attitudes of the students; they will have to seek alliances with progressive politicians and labour market agents; they will have to accept compromises; and they will constantly have to find out how to optimise their endeavours in relation to changing conditions that are always insufficient.

What is really needed is for as many adult education participants as possible to be guaranteed a meaningful job after successfully completed courses, and that the criteria for this are clear and reasonable viewed from the perspective of the students. This is the main conclusion of the Adult Education Research Project. It has the character of a strong political demand, but it is not unrealistic as unemployment rates are falling in Denmark and many other Western European countries.

Today vast resources are invested in adult educational measures and compulsion which are the result of highly prioritised political effort, but to a great extent this effort fails because the ambivalence of the students and the ambiguities of endeavours are not taken into account. Only a job guarantee would be able to cope with these conditions efficiently.

And for those who cannot obtain such a guarantee it would be better to make it straightforward and allow the freedom to spend the resources on any activity that the persons in question prefer, regardless of whether the activity provides job qualifications or not. This would be more honest and pave the way for more activities that would provide more engagement. It would probably also be more qualifying for the participants and maybe even create more flexible qualifications than the rigid strategies produced by today's compulsion.

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WHAT IS DONE IN THE NAME OF LEARNING?

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The paper is based on a case analysis concerning the change in office work within the state sector and it is part of a broader project, the "office project"^{1, 2}. It shows how unequal power relations, cross pressure, contradictory rationalities and hegemonic values connected with the process of modernisation makes it difficult to realise the new strategy of the Danish Trade Union Movement: "Work that develops".

'The learning organisation' and 'Work that develops'.

The trade unions as well as private and public employers in Denmark are in agreement that developing competence and learning are important keys to a future society based on harmony between societal demands and individual needs. The discourse is hegemonic but at the same time strategies for change are formulated that struggle on the basis of different interests which in themselves are contradictory. In the Danish context the two strategies, 'The learning organisation' and 'Work that develops', are in opposition to each other, representing as they do the employer and the trade union points of view

'The learning organisation' has become a kind of collective term for development strategies that at the level of the organisation try to create coherence between individual development of competence and the development of enterprises and institutions (cf. for example Hauen et al. 1996, Senge 1993, 1994, and Argyris and Schön 1978). This is a relatively unclear concept which (as a rule) describes a management-initiated development strategy which it is attempted to implement against the background of new demands concerning the activity of enterprises and public institutions (for example, as a result of the introduction of new technology, changed demands on the part of the market and customers, changed demands on the part of the staff to their work, difficulties in recruiting or holding on to staff, rationalisation and efficiency demands etc.)

In this management thinking, learning and organisational development are regarded as a process which to a large extent can be controlled and organised in harmony between staff interests and the development of the enterprise. Staff perspectives which are not compatible with the development of the organisation are not legitimate. In descriptions of 'the learning organisation', the focus is on development of internal communication and the development of forms of co-operation in the organisation, for example organisation in teams, project groups and the like. The fundamental view of the staff members is that they are in possession of resources, knowledge and experience that the organisation needs. For the organisation, it is a matter of mobilising and developing the staff's 'human resources'. Furthermore, the staff are to take responsibility for and continuously contribute to developing their own work and the organisation to make it flexible and efficient and in order for high quality work to be performed.

¹ This is a long-term project which is being carried out in stages. The aim of the individual stages is to produce independent, empirical results and theoretical and methodological contributions to research on working life and life history. This article was written on the basis of the first stage, a pilot project that was implemented between summer 1998 and summer 1999 and which encompassed a case analysis of a state organisation. The pilot project was financed by the Ministry of Education and the VEMS research project (VEMS is 'Adult education – societal needs, increased demand control of educational activities, and social and professional development of competence'), which is financed by the research councils. The project is also linked to a research council project entitled "Adult life and adult learning" at the Department of Educational Research at Roskilde University. The continuation of the project has been ensured, inter alia, by means of this link and a separate grant from the Danish Research Council for the Humanities.

² Approximately 35% of the total workforce in Denmark are employed in the public sector, of whom approximately one quarter are employed by the state. In 1997 there were just under 200,000 state employees spread over 685 state institutions. This group of office workers consists of people who do office work and who are skilled workers with a four-year vocational training. Most of them are women. They are normally organised in the Union of Commercial and Clerical Employees in Denmark (HK), which is the largest trade union in the Danish Confederation of Trade Unions (LO) with approximately 350,000 members, 40,000 of whom are employed in the state sector.

In this development the trade union movement³ sees a possibility for taking care of the individual and collective interests of its members. Mobilisation of 'human resources' in the work, increased decentralisation and staff responsibility etc. are seen as steps on the way towards the introduction of 'work that develops'. For the trade union movement the perspectives include increased democratisation, greater influence on the content and organisation of work, influence on the development of the enterprises, improved health and safety, and the development of sustainable production.

The policy of the trade union movement has its roots in the post-war era regarded as an historical learning process. Partly on the basis of what learned from the breakdown of civil society under National Socialism, and partly in an attempt to withstand the influence of Communism on the Danish trade union movement and politics just after the war the Social Democratic Party formulated a programme entitled 'Fremtidens Danmark' (Denmark of the future), which contained measures to do with planned economy and democratisation, inter alia the introduction of a type of council democracy at places of work. However, the relative strengths in the scarcity situation of the post-war period between employers and employees did not permit the realisation of the plan's more visionary content, and the decline of the communists, politically and in the trade union movement, eased the pressure in relation to policy formulation that also was aimed at realising the demands of the left wing. Cooperation between employers and the trade union movement was instead based on a 'Fordist cooperation pact' (cf. Sommer 2000). The workers' movement accepted the introduction of new technology and the intensification of production, the introduction of scientific management, the link between production and piecework wages systems, and the development of standardised mass production. The price was a share in the profits of rationalisation, inter alia in the shape of higher wages, reduced working time, humane treatment on the job and the development of an institutionalised system of cooperation. Technology was largely regarded as being neutral, inevitable, and the central means of achieving a higher standard of living.

This policy lost its innocence at the end of the 1960s when not only physical and chemical working environment problems were placed on the agenda, but also the consequences of the instrumental application of technology on a broader societal scale. In sections of the left wing of the trade union movement and often in cooperation with academics, completely new demands of work were formulated in the direction of more democracy, a better working environment, workers' participation in the design of technology and work organisation, demands for socially beneficial and healthy products, and demands concerning education and training that not only served to consider the employers' interests but also broader social and personal purposes. Behind these demands lay fundamental criticism of work in its capitalist form and visions about working life as a space for common and personal development.

Some of the ideas and demands provided inspiration for the development in the wider trade union movement, but we have to proceed to the end of the 1980s and the beginning of the 90s before this type of demand came through as a general strategy. The background was an historical opening as a consequence of changed conditions for competition, new production ideas and management philosophies etc., which meant that the employers made new demands of the workforce. The development in the private sector paved the way and became a source of inspiration for corresponding changes within the public sector with objectives about, among other things, stepped-up market control and new forms of management, work organisation and wages.

Against this background and taught by historical experience, the trade union movement formulated a long-term strategy that aimed at exploiting the potential in the new technology, forms of management etc., and at acting as intermediary between the economic, technical rationale of production and wage earners' opportunities for self-realisation and health. The strategy about 'Work that Develops', which can be regarded as the basis of a 'post-Fordist pact', was launched.

Within the public sector, the trade union movement together with a Social Democratic government have succeed in introducing 'Work that Develops' as an objective of state personnel policy, as an integrated part of the modernisation of the public sector (conversion to New Public Management).

The public sector is increasingly marked by a new market economic rationality which manifests itself in new competition-like conditions that find concrete expression in privatisation, contracting out and taximeter principles. New management mechanisms in the form of target-oriented and framework management,

³ About 80% of workers in Denmark are organised in a trade union. There are three main organisations on the Danish labour market: the Danish Confederation of Trade Unions (LO) with approx. 1.5 million members, 48% of whom are women; the Danish Confederation of Graduate Employee Associations (AC) with just over 200,000 members; and the Joint Council for Civil Servants and Salaried Employees (FTF), for professional groups with medium-cycle education, which has just over 400,000 members.

contract management and corporate accounts, new forms of wages and new management methods set a new political framework for public organisations and their employees. This is assumed to be able to cooperate harmoniously with the strategy concerning 'Work that Develops'.

But what happens when development of competence and learning become generalised as unproblematised objectives for change? What tensions arise when conflict lines appear and how are the people involved affected? Is 'Work that develops' only a formulation on paper, while in reality the rationale behind 'The learning organisation' is realised? One way of illustrating such questions is to analyse working conditions and learning possibilities in organisations that are in the process of implementing 'the learning organisation'. In the following case analysis it is illustrated how the implementation of 'Work that develops' on the basis of systemic rationalities (cf. Habermas 1981) can to a certain extent be counter-productive in relation to organisational development that aims at developing 'human resources'.

Modernisation under fire

Therefore, everybody should have a positive attitude to both professional and personal development and a flexible attitude to working area and place of work.

(From the 'Personnel Policy' of the organisation)

The case organisation was set up at the end of the 1980s with the main task of receiving and processing complaints within an area of ministerial responsibility and of pre-empting complaints. At the beginning of the 1990s public criticism of the time it took the organisation to process cases led to a merger with another state organisation and to the appointment of a new head. From this point in time, a process was initiated to reduce case-processing times.

As part of an external inquiry by consultants, in autumn 1995 an investigation of well-being was implemented which concluded that there was something wrong in the organisation. According to the consultants' report, the most important reasons had to do with management, a lack of opportunities for personal development in the job and a lack of training opportunities. The new head had initiated modernisation but the staff were dissatisfied with the style of management and there was general insecurity in the organisation. The inquiry led to the immediate departure of the then head.

Today there are approximately 50 employees in the organisation: a director (appointed for a fixed term on contract), a deputy head, a large group of graduate official staff (mostly law graduates), a smaller group of specialised experts, a large group of clerical staff (some of whom have been employed on special terms)⁴, and student assistants. About 100 consultant experts are also associated with the organisation who contribute specialist knowledge in connection with processing the cases.

In 1996 the implementation of an organisational development project was initiated.

As an example of the implementation of state modernisation policy, the development in the organisation between 1996 and 1999 can in many ways be described as a success. A number of initiatives were launched with a view to making the work more efficient.

- Case procedures have been rationalised.
- The salary system has been refined as a system of incentives both in relation to increasing productivity (collectively) and in relation to the individual taking on new tasks (individually)
- Team-based organisation has been introduced, inter alia on the grounds that this would make the work more efficient.
- The number of working procedures in relation to the individual case have been reduced.
- The introduction of computing has made it possible to control the handling of cases and make this process more efficient.
- A process has been initiated whereby the clerical staff are to take over cases from the official staff with a view to reducing the costs involved in case administration.
- Work with decisions on cases has been made more efficient.

⁴ Persons with a permanent limitation in their ability to work and who are unable to obtain a job or to remain in employment on normal terms can be employed on special terms. The employer receives a public subsidy of up to two-thirds of the minimum wage for employing persons on special terms.

Most of these initiatives have a negative side. The rationalisation of the work is accompanied by intensification, which has increased the pressure of the work and reduced the possibilities of creating a framework for the professional and personal development of the workers, the individual parts of the system of rewards are oriented towards taking on special tasks that lie outside the core areas of the organisation and only benefit individuals, the team organisation does not function optimally, and there is passive resistance among the clerical staff to taking over tasks from the official staff.

The process of modernisation has faced the organisation with new types of demands and contradictions, producing new kinds of conflicts and dilemmas.

The investigation shows that in the case organisation great differences exist between the employees with respect to value norms, imaginative frameworks and symbolism. Nevertheless the organisation is to a large extent able to create co-operation to carry out tasks.

On the other hand, complexity and contradictions exist which work counter to each other due to different values and orientations. Most of this takes place invisibly in the every day of the organisation. In the interaction analysis alliances are made visible which in some cases cut across the professional groups, and negotiations that classify the office employees on the basis of different criteria and rationales. We see dividing lines between collective defence dynamics aimed at avoiding exploitation and at protecting those who are 'weak', and individual development and career dynamics. The interactional negotiations in the organisation lead to the establishment of strong coalitions which also contain clerical staff and which promote the modernisation objectives of the organisation. But more defensive coalitions also appear. As there is no real interface where a common front can be defined, it becomes a matter of situational interactive attempts at establishing solidarity, which are relatively easy to brush aside. The individual office employee turns the answer inwards.

At the same time exclusion mechanisms can be observed in relation to groups who do not fit in with the development rationale of the organisation. This takes place by means of allocation of salaries and status with a basis in the development requirements of the organisation. It takes place in the interaction between the professional groups (for example, the officials' stereotyping of the clerical staff), but also within the professional groups.

The analysis of the symbolic interaction in the organisation points to the existence of a barely visible layer full of ambivalence, contradictions and resistance which is an expression of the fact that a number of the organisation's problems are in reality not discussed. The organisation is split to some extent and the consensus-seeking development policy, where statements must be formulated within certain rationalities, makes it difficult to deal with internal contradictions and conflicts

It might be said that the organisation is modelling an ideal of the clerical staff in the image of the legal staff. In opposition to this the clerical staff's basic conception of their work is that the planning and prioritisation horizons are short 'one or at most two days' and that pleasure in their work is primarily a matter of *'having cleared one's desk before going home'*, secondarily of *'avoiding making mistakes'* and, in some cases, of *'correcting mistakes made by the officials'*.

However, the clerical staff's criteria for 'work that develops' are not formulated proactively.

The present development in the job functions of the clerical staff are, on the one hand, oriented towards taking over more case work from the official staff and, on the other hand, towards types of tasks that lie beyond case work. The clerical staff experience a sharp contradiction and cross-pressure between efficiency and development demands and question the extent to which taking over more tasks from the official staff will lead to a better job or whether it will merely be a matter of even more routine work done under pressure of time. They use, inter alia, the following arguments:

- The work that the clerks can take over is experienced as just more routine work that will merely serve to increase the pressure of work.
- There are no salary incentives for taking over the officials' work. Efficiency in carrying out casework only has an impact on the collective salary while the individual bonuses are linked to taking on supplementary tasks over and above case work.
- Everything else being equal, changed distribution of case work between the official staff and the clerical staff would shift a greater proportion of the responsibility for keeping case processing deadlines over to the clerical staff.
- Individual ideas about the desirability of taking over a greater proportion of the case work from the official staff is overshadowed by the risk of the clerical staff getting into trouble if it proves difficult

to live up to the demands for efficiency, i.e. the increased qualification demands.

- Some of the clerical staff say that it would show a lack of solidarity to take work from the official staff.

This has the effect of the borderline between clerical and official work being relatively locked into position.

The desire to move further into the domain of the caseworkers is tendentially blocked, which manifests itself as a blockage to learning in the present situation.

In spite of quite radical changes in the clerical workers' job construction, qualification for new areas of work has largely taken the form of informal learning at work. Formal learning mostly takes place through brief courses in bookkeeping, wages and registration systems.

In connection with the implementation of the organisational development project a broader competence development project has been conducted. The aim is to develop '*a service-oriented organisation with efficient flexibility and staff who show initiative*'. Four training modules that take a total of 9 days have been organised for the secretarial group. The modules contain the following: '*communication/oral communication*', '*written communication*', '*organisation, the Public Administration Act, the Open Administration Act and information*', and '*case administration, quality and service*'. Courses have also been held on '*team building*' for the group of officials and all employees, respectively.

Statements by the office employees point in the direction of them not immediately being able to see the concrete purpose of training. Training is to a higher degree regarded as a staff benefit or as something that one might be able to use at a later time: 'Training is always a good thing' - The statements point to the office staff having formal co-determination but that they do not experience this co-determination as genuine. In other words, the staff experience that they are neither sufficiently involved nor have sufficient qualifications for taking part in decision-making processes. To formulate it rather bluntly, it could be said that in reality it is difficult for them to see any meaning in the training.

In the personnel policy of the organisation, success or failure are made dependent on 'the personal stage of development' (cf. the organisation's personnel policy that is formulated in writing), and corresponding models of interpretation come up in the interaction where the attitude to, for example, development is characterised in dimensions of willingness and unwillingness and where examples are constantly brought up of individuals who have "done it", i.e. developed, taken new tasks over from the official staff etc. Most of them state that they would like personal and professional development when it is formulated abstractly, but due to the degree of intensity of their work and the differentiation of modernisation and disagreement among the staff, in practice many experience the demands as excessively challenging. The result is psychic pressure as a consequence of work intensity and development requirements, and the counterpart to this pressure: tacit resistance.

Breaking their silence and formulating new positions vis-à-vis positive development for the group requires time and space for which the swift and dramatic history has not left room. It is also difficult to break silence because the various interests and positions in relation to modernisation cannot be legitimately thematised within the organisation. Initiatives with regard to this imply a break/conflict with the conceptions of modernisation that are marked by consensus that not only function internally within the organisation but which are based on dominant conceptions of modernisation in working life, for example in the vision of 'the learning organisation' in which the rationality of modernisation forms a basic condition.

By including a biographical perspective, the view of the office workers' position in the organisation can be better understood: How is one to interpret the fact that the same organisation is experienced as a stimulating and developing learning environment by some of the staff while others experience the learning environment in the organisation as de-motivating and blocking? One reason may be that there exist interactional mechanisms that distribute marginal and central placing within an economic, social and cultural field, but what personal characteristics and qualifications are crucial for positions and positioning and thus for the differentiated learning conditions in the organisation?

That different lives and their biographical tracks have created personalities with some basic life and working strategies that also mark the persons' 'learning process' in the organisation, where they have had quite different consequences

The secretaries link their identity to special dimensions in their work in a complex process of interaction between life history and working situation. These process do not only take place individually but in close interaction with the interactional processes in the organisation where identity is negotiated and established,

and they act together with internal and external discourses. The staff's previous learning experiences are of crucial importance for their attitude to education and training, and the possibilities for learning on the job are exploited differently depending on the motivation of the individual.

The energy to learn depends on the overall balance between stability and change in life within the person - whether the person is prepared to jump into new professional challenges on the basis of previous experience. It is also important whether the present situation of the person is marked by energy or strain, and it is important whether the learning processes are aimed at a future dream job in the organisation or if they point away from dreams of a good job.

The 'space' within which the secretaries can develop is understood differently. Some of them have difficulty in acquiring new knowledge and new qualifications for reasons of personal insecurity and negative educational experiences. In a situation where the collegiate fellowship among the secretaries is strained for various reasons, blocks are established against looking for support from colleagues and one's equals. The learning preparedness of the individual depends to varying degrees on collective contexts which could function as support. While some of the secretaries see their life project as an individual learning process, several speak of the demand for training as an almost impassable barrier which they have only overcome earlier in their lives by focusing on friends, fun and games and other equals as support persons, at the same time as they, nevertheless, have always been able to qualify themselves in relation to the technological and work-organisational changes in a clerical job. However, it is clear that the possibilities of collective learning are made difficult when relations to colleagues are under pressure. There are, however, differences in the extent to which the individual person can cope without the group. The life-history dynamics serve as a background understanding of the extent to which the individual can live up to the demand of learning alone in more or less direct competition with colleagues.

The result is, that some of the staff experience new possibilities of development, while others feel unfairly treated in relation to new types of tasks. There are modernisation winners and modernisation losers. The background is the interaction between the biography of the individual and the organisation as a working and learning environment, as the organisations favours special qualifications at the expense of others, among them the ability for individual discursive positioning.

Conclusion

The organisation in the case defines itself as a 'learning organisation'. This implies that learning and development should be a possibility for everyone, but that there also exists an obligation to learn and develop. In the concrete form the term also implies that learning should primarily be related to the tasks and development objectives of the organisation

One of the most important features of the learning environment in the organisation has proved to be that learning opportunities and professional development are utilised as management tools in relation to the individual employee and that this is part of the mutual positioning between the employees. Acquiring status and learning possibilities within the organisation presuppose the ability to make an individual mark in competition with colleagues, because explicit demonstration of motivation and desire for professional development are rewarded while the opposite is relatively punished. The learning consequences for the individual constitute the constellation between personal 'participant qualifications', the ability to make these visible and the 'rewards structure' of the organisation with respect to possibilities for development and learning, which again are connected with the social and cultural aspects of the development of the organisation.

On this background it can be pointed out that the development of the organisation does not live up to the objectives concerning a learning organisation.

For the clerical group the organisational changes have led to cross pressure between demands for development and increased efficiency. They also mean that the introduction of the learning organisation can conflict with the ideas of the trade union movement with respect to work that develops, because protective considerations based on solidarity and objectives to do with synergy effects between organisational development and the individual's development possibilities are not met for all. This results, inter alia, in mechanisms of marginal placing and exclusion and a differentiation and polarisation between 'modernisation winners' and 'modernisation losers'. This intensifies processes of ejection in working life in a form in which experience of inadequacy is individualised and turned into a question of 'personality'. This can erode the experience of personal identity and make the work of mental balance difficult for the individual.

This is not only due to problems of implementation but also to the built-in economising rationale of the concept, which in this specific case has led to radical intensification, tight control and severe system dependency in the work. It is also due to problems connected to the notion of a unitary culture that does not accept the formulation of wishes and demands towards work that are not in line with the official 'canon of development'.

Nobody can imagine that organisations only exist for the sake of the staff. It is most frequently others than the members of the organisation who provide the financial means and who use/buy the services or products of the organisation, whether it be a public or a private enterprise. These 'others' have legitimate interests which must be honoured. But criticism is justified to the extent that organisations do not make sufficient use of *existing* possibilities for having consideration for the individual and collective interests of the staff, and to the extent that the staff do not treat each other equally and with respect for mutual differences. There can be no doubt that organisations can achieve a considerably richer inner life and an inner life with more human dignity if the development is built on concrete diagnoses and on involving and developing the special features of all, instead of on general models of organisational development and the special ability of individual persons to adapt in relation to the rationality in these. This point of criticism is not only aimed at management thinking and forms of implementation of state modernisation policy. The criticism is, in general, aimed at prescription thinking, also to the extent that, for example, prescriptions are developed in relation to implementing work that develops.

A trade union strategy that is formulated in extension of the individualisation and development orientation of the process of modernisation and which aims at preparing the individual to demonstrate his or her own worth and demand his/her individual rights, would take care of the immediate wishes of a number of members. However, it would also threaten the basis of solidarity for the existence of the trade union if organisation based on solidarity is not simultaneously maintained and if a working policy of solidarity is not formulated as well as a more proactive proposal as to what the democratisation of working life means (cf. Andersen 1990, Sommer 1999, 2000).

If a discourse that leads to the personification of problems and to individual acceptance of 'blame' for a lack of 'preparedness to develop', etc. gets the upper hand, this will contribute to undermining such societal resources as identity, meaning and solidarity. One problem in the present strategy of the trade unions for work that develops is that it can easily have an oppressive effect in relation to the collective attention to interests because, in practice, 'development' has already been hegemonised as a concept for harmony between the 'needs of the individual' and 'socially necessary development', and because to a large extent it is not legitimate to express that one does not want the type of development that is professed in the discourse of modernisation.

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SEMI-SKILLED, MATURE MEN IN ADULT EDUCATION - MOTIVATION AND BARRIERS. A RESEARCH PROJECT SUMMARY

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Introduction

Denmark faces structural problems similar to other Western, industrial societies: economy is changing rapidly, globalization and post-industrialism are visible factors on the labour market, and in culture and every day life. Approximately one third of the workforce (in DK about 3 mio. people) possess skills and competencies that might have been adequate in the era of fordistic industrialism, but which are now gradually becoming outdated (for instance, statistics show that ten years ago 3 out of 10 unskilled workers faced long term unemployment; it has now risen to 4 out of 10; a survey recently predicted that within the next 10 years 65.000 unskilled jobs will disappear); around one million workers left school early, having only seven to nine years of general education behind them; more than two thirds of these have no vocational education at all (yet half of these might have attended a few weeks of practical labour market training courses).

For several years it has been an integrated part of the dominating political philosophy to solve these structural problems by the means of adult and continuing education. Reforms have been negotiated with the social partners and laws have been passed in parliament, expressing the rather wide spread consensus in Denmark about the value of implementing the more or less global ideas of 'life long learning'.

But the head ache for politicians and civil servants is that it seems as if - to put it shortly - those adults with the biggest objective need of more education are the ones that participate least.

Related to some analytical work that civil servants from the Danish Ministry of Education had to do in preparing a reform of the adult and continuing education system, discussions came up about this complex or syndrom: as long as those with good educational backgrounds are the ones that participate the most in adult and continuing education, how can we qualify the majority of the workforce, strengthen competitiveness of our economy and combat social exclusion etc.? There was a need of having a deeper look into the motivations, possibilities and barriers related to mature unskilled workers educational chances.

This lead to an agreement between Roskilde University, Adult Education Research Group and the Danish Ministry of Education about a survey, focusing on a group, which does not participate very much in adult education, and for which researchers have not shown much interest: semi-skilled, male workers between 40 and 60 years of age.

Method and theory

We were asked by the ministry to, partly, carry out a survey, and, partly, to propose changes on all levels of supply, according to the findings in this survey and based on a generalisation of examples of 'good practise' in already existing programmes for this target group.

First of all, we examined national and, to some extent, international literature about motivation and barriers related to participation in adult and continuing education. Included in this examination were concrete empirical surveys and evaluations, for instance of the experiences with activities performed due to the Danish Paid Educational Leave Act (VUS). We did this partly to identify relevant problems and questions for our own research process, partly to obtain a bigger volume of data, for instance statistics about men of this age participating in VUS.

Secondly, we made a questionnaire survey, based on 2.400 respondents, chosen among unions, which primarily organise unskilled and semi-skilled men. Practically all respondents were men between 40 and 60, i.e. born between 1936 and 1956. The three unions are: SiD (general workers union - industry-, transport-, construction- and agricultural workers), HK (white collar - trade and stock workers) and Danske Vognmænd (independent haulage contractors).

Thirdly, we interviewed 11 respondents among those who filled in and returned the questionnaire, stating that they were willing to be interviewed. The interviews were carried out in the respondents' homes or

workplaces; they were semistructured interviews, more or less a dialogue based on the themes and answers in the questionnaire.

For the questionnaire as well as for the interviews the themes were:

- the respondents' educational background, compulsory school and vocational education, relationship with teachers, success and failure with different subjects etc.
- the symbolic representation of education in the socio-cultural context of the respondent as a child and now: what were the parents' view of school and education, their own educational background, interest and involvement in the respondents schoolmatters etc. Also, the actual spouses relationship with education was asked to and discussed.
- the present relationship of the respondent to work and labour market issues: what characterises the actual work place of the respondent; how often has he changed his job; has he been unemployed; what is his ideal of a good work place, i.e. what values does he fancy in the job?
- finally, we asked directly about the respondents' view on education: would he like to participate, has he already participated; in that case: in what, and why? What barriers has he faced, and what would he like to see of changes in the supply of the educational institutions, if he was to participate (more)?

Fourthly, we visited adult education institutions, which have run programmes for this target group with at least some success, in order to identify and describe elements of concepts and activities that could be generalised as ways of 'good practise' - and thus function as recommendations for future reforms and changes on different levels of policies and supply of adult and continuing education. To do this we observed the learning environment and interviewed participants, teachers and directors here.

To have a background of notions and pre-understandings to relate to in our interpretation of our data we made explicit our understanding of the major societal changes that by the end of the day have put our issue on the agenda: what is it, basically, that makes it interesting, relevant, necessary etc. to change the understanding of education from something that *was a possibility* for a few members of society in *specific parts* of their lives into something that *is a necessity* to all members of society *all through* their life course?

The understanding of this basic question is a precondition for understanding *our* basic theoretical question: how does our target group fit in, react to, resist against etc. this historical development - and why?

To reflect this we found it relevant to try to formulate understandings of:

- civilisation: from traditionalism into modernity?
- economy and production: from industrialism to post-industrialism?
- culture: from collective working class culture into individual selfrealization?
- gender identity: from masculinity into androgyny?

Basically, our aim was to be able to understand our specific target group and its complex relation to lifelong learning in the light of the understandings mentioned..

For what purpose? In order to avoid the actual danger that education turns from a mean of enlightenment, liberation and democratization into an instrument in the hand of the system to polarize, divide and oppress cultures and life styles in the name of neo-liberalistic pragmatism: efficiency, competitiveness, consumerism and economic growth. And furthermore: to see if it is possible to identify cultural-symbolic elements (meanings, understandings, presuppositions, values etc.) in the concrete formulations of the target group itself that can function as starting points for selfregulated educational processes.

Some findings

First some important findings from the questionnaire survey, focusing on the members of SiD (general workers union).

About school: half of the SiD-respondents left school after 7. grade, and after 9. grade almost 3 out of 4 had left. For the respondents parents, 9 out of 10 left school after 7. grade (in those days seven years were compulsory; it is now nine years). How were the parents attitude towards their childrens (the respondents) school? Less than half of the SiDs tick "Yes, my parents wanted me to have an education"; only 1 out of 4 says that their parents attended school meetings and other activities related to school. 1 out of 5 says that the parents deliberately wanted him to leave school as soon as possible. In their comments several of them notes that their parents were rather passive towards school, and that it was an important value for both parents and the respondents themselves to finish school and get a job; it was important to become independent, to earn money - and besides, there was little money in the family for further schooling.

It is remarkable that only app. half of the SiDs say that they were OK with the subject Danish (reading and writing) in school; only 2 out of 3 felt OK with mathematics and with their relationship with the teachers. Many of the SiDs take the opportunity of commenting their school experience; some typical comments are: "The teachers were in favour of the more well off kids"; "The teachers would beat us up and tear apart our selfesteem from the very first day"; "My school time was a hell and my thoughts about school are few and small".

3 out of 10 SiDs have no vocational education at all; other 3 out of 10 have short term vocational labour market training courses; 33% have a vocational education, and 5% have some further education. For the parents it goes that 9 out of 10 had no education what so ever.

About work: most of the respondents have a stable connection with their workplace: almost 3 out of 4 have had only one work place within the last five years. Also, we asked them, what characterized their workplace. The social aspect gets the highest score: 9 out of 10 stress that they have good colleagues, 8 out of 10 that they can have a private conversation with their colleagues during working hours. They have some independency in their job: 8 out of 10 say that they have to/are allowed to organise their work themselves.

What is maybe remarkable is that less than half of the respondents tick that their work place offer them a possibility of in-service training or other forms of continuing education.

We asked the respondents to prioritize three statements that they would value if they could freely choose their job; the highest score is about the social relations: "That the management should respect and understand the employees"; secondly, that there should be "a good working environment"; thirdly, "a good comradeship", and fourthly: "Security in the job". The possibility of access to training and education gets the second lowest score!

About education: 3 out of 10 of the SiDs say that they are interested in adult education, and they have already participated; other 3 out of 10 say that they are interested, but they have not yet participated; 4 out of 10 say that they are not interested (this is no doubt a minimum; we carried through a supplementary survey among those who did not answer our questionnaire in the first place; these telephone interviews revealed that 62% were not interested!).

We asked those who were interested about their motivation; the scores were: 1) "To prove for myself that I am capable". 2) "To meet new people", and 3) "Because I have good experiences from participation in courses". Interesting enough is that the statement: "Because my job demands new qualifications" scores quite little.

Furthermore, we asked what kind of adult education the respondents would prefer to attend; the scores are: 1) "Labour market training courses", 2) "in-service training, arranged by the company" and 3) "programmes run by the union".

Also, we asked what made it difficult for the respondents to participate in adult education. For the SiDs the findings were that they 1) found that they were too old to participate, 2) that there was no educational policy in the companies, and 3) that they were generally too busy, both in their job and in their leisure time.

Finally, we asked what changes in the educational system would make them (more) interested in participation. The highest score was: 1) That the courses would be more directly relevant for the job, 2) that they would not lose money from participation, and 3) that the courses would lead to higher salaries.

The cross tabulations showed among other things that:

- interest in participation decreases with age,

- the higher school education, the more interest in participation,
- the more positive parents - and the respondents themselves - were in the respondents school, the more interest in participation as adults,
- the better possibilities the workplace offers for adult education and development in work, the more interest in participation,
- for the members of SiD: those with relatively good wages are less interested than those with relatively low wages
- the more satisfied the respondents are with their present job, the less interested are they in participation, and
- those, whose values about their work situation are related to good comradeship, good working environment, high wages and job security, are less interested than those, whose values are about a personal and qualification developing job.

The findings in the interviews are along the same lines. What does all this mean?

Outline of an analysis

It seems as if the transition of our society, economy and culture goes too fast for the traditional industrial working man. He seems to be "ungleichzeitig" (Ernst Bloch). Among our respondents in this research project there is apparently taken no attitudinal consequences of this transition: many of them do not seem to realize the social danger they face: that globalization and post-industrialism rapidly removes the firm ground they used to stand on. Many of them are not interested in education because they already have the values they look for in life: good earnings, comradeship, jobsecurity etc. If they are interested in education, it is more as this being a pleasant change from daily routines - or it is about a day by day investment in maintaining the good, unskilled industrial job, they have already. There is no consciousness about the need for a long term investment in education which (their 'superiors' claim) would lead to a safe position in the post-industrial information society.

This goes along with a profound socio-cultural heritage from generations: there is no tradition of education in the family; they have been doing well during the prosperous post war period, earned good money in stable jobs - and by solidarity and collective values stabilised the welfare society, which is - seen from this point of view - the optimal consolidation of future security. Education is a foreign territory - hard work and respect are familiar bull fighting areas. Education can change your life; for modern middle class people this is a chance - for the industrial working man it is a risk. For generations he has had risks enough - why should he seek it purposely? And if education seems to be inevitable, in his view its symbolic impact should be minimized as much as possible: specific job training courses or programmes run by the union; here he feels safe.

In this instrumental, rather short term view he is supported by his employer: not many of them perform strategical management, analysis of future qualification demands and educational planning in accordance with this. They are all: workers, managers and owners gathered in the same comfortable, well facilitated and heated tent on an ice floe; only problem is that this ice floe is gradually drifting into the Gulf Stream, apparently without anybody noticing it!

What to do? A conclusion

1. Educational philosophies and activities should respect the immediate victims of global post-industrialism: their history, values and hopes for the future.
2. Didactically, education should share the problems of necessary changes in society with people themselves: industrial workers, owners and managers of small and medium sized companies, other traditionalists. Do not expect the concept of life long learning to be successful if in reality it represents a double up of reification.
3. Thus, learning processes in this context should be based on social experiments in the companies; learning will derive from changes in power relations, work organisation and future planning; don't force change - let it grow. Involve people and thus make them responsible for their own choices.

4. Educational institutions should be forced to come to people - not the other way around. They should be supporters and facilitators of change - not teachers and priests. Democratic potentials in the trade unions should be activated; they are symbols of the collective culture of solidarity - and should be guardians of educational and industrial democracy.

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Workplace learning and the connection between learning at work and learning in educational institutions has come in both political and theoretical focus. The urge to link work and educational activities calls for an analysis of the learning environments. Through a nuanced understanding of learning environments and learning at work it is possible to open perspectives where the link isn't only about fulfilling the immediate production needs of the enterprises.

Workplace learning has traditionally been conceived as a result of technological and organisational changes. Learning is supposed to occur in accordance with the economic rationale of the enterprise: Improving efficiency and quality, and innovating products and processes.

Against this conception others have argued that it is important to analyse work as a social practice where learning is in integral part of becoming and being a member of a community of practice. This means that learning is a process of reproducing and negotiating shared culture, meaning and knowledge. However, also social theories of learning with focus on community or culture are being challenged by theories that put more emphasis on the significance of the biographical aspects.

In the paper we will argue that analysis of learning at work should include aspects from all the three mentioned approaches: 1. The technical and organisational environment of production 2. The social negotiation of meaning in communities in the workplace 3. The individual biographies of the learning employees.

The technical-organisational environment in the workplace

The first dimension of the learning environment can be called *the technical/organisational environment*. Inspired by industrial sociology (e.g. Kern and Schumann, 1970; 1984) we can distinguish between four dimensions of work: autonomy, application of skills, social interaction and pressure.

1. *Autonomy in work*. The degree of autonomy depends both on the distribution of tasks and the organisational structure of the business, and of the employee's position within the workplace. The business may be organised according to more or less centralised, hierarchical principles, or it may have a flat, decentralised organisational structure. International comparisons have revealed marked differences between the organisational structures in the same type of businesses in different European countries. (Maurice, et al. 1986). Likewise, large differences between different sectors and types of businesses prevail. A small, innovative pioneering company partaking in close customer contact affords its employees more autonomy than a large and hierarchically structured business that produce standard goods.

Ellström (Ellström 1996) relates the degree of autonomy with the type of learning taking place. He distinguishes between different levels of learning: reproductive, productive and creative learning. The lowest level, reproductive learning, takes places in a work situation where there are few options of disposition, since the work is rigidly mapped out e.g. through studies of methodology. The opportunities for creative learning (the highest level) exist when the individual employee is able to choose his or her tasks as well as the work methods, and also controls the work carried out. The presumption is that the more autonomy the work involves, the more options for learning does it entail.

2. *The opportunity for applying skills in the work process* depends, among other things, on the production technology, the products and the distribution of tasks in the workplace. The general presumption has been that a high level of skills in the work will automatically result in more autonomy. However, the introduction of information technology has led to new possibilities for also highly skilled work to be controlled in detail by central management, and thus to reduce autonomy (Bechtle, 1993).

In general we observe two opposed trends: on the one hand, the labour market's demands for new skills are on the increase – the number of "symbol analysts" is growing. On the other hand, there is a tendency to rationalise also the technical administrative work by imposing from above more detailed demands and methodology within this work. These two trends must be assumed to conflict with respect to the opportunities for learning at work.

3. *The opportunity for social interaction at work.* Learning is a social process that takes place when the employees debate among themselves, reflect and exchange experiences, ideas and critical comments with each other. Schön has pointed out how the interaction between an experienced *coach* and a student may stimulate the reflection-in-action of the student. (Schön, 1987).

Not least the encounters between different professions – operators, technicians, production planners and sales people – may form productive learning environments – though it may also contribute to cementing mutual myths and hostile images. Conversely, a workplace with rigid communication channels and one-way communication is not conducive to an open exchange of ideas.

4. *Pressure at work.* Conclusively, the opportunities for learning are also dependent on the extent and the character of pressure involved in the work. When the duties require fast and intense work, the opportunities for learning are becoming poorer because the time and excess resources needed in order to learn are not present. When the work is a very repetitive strain and without variation, it does not stimulate the employee to learn.

Those four dimensions of work describe an important part of the learning environment. They describe the physical, technical and organisational environment of the labour process. These conditions frame the learning processes in the workplace and they encompass resources as well as limitations for learning. However the learning environment is also consisting of and dependent on several social and cultural factors within the workplace.

The socio-cultural environment in the workplace

Various theoretical approaches are focusing on the social and cultural environment in the workplaces in order to develop an understanding of learning in the workplace. From different angles management concepts, HRM strategies, and theories of social practice focus on the active participation in different practices in the workplace. The theory of learning in communities of practice (Lave and Wenger 1991; Wenger 1998) focuses on how learning occurs in connection with the everyday work routines within local communities. Learning is about current negotiations about meaning and identity in relation to these communities. The theory focuses on the micro-social processes and doesn't provide analytical tools to understand how the conditions in the workplace are shaped by the dynamics of society and the contradictory conditions in wage-earning work. This is an important element, particularly in a country like Denmark that has strong traditions for collective organisation and regulation of the labour market.

We suggest the use of an ordinary sociological division between the social relations the workplace seen from an economical, a political and a cultural rationale respectively; *Any work context involves an economic dimension (production of things), a political dimension (production of social relations) and an ideological dimension (production of an experience of those relations).* (Burawoy, 1978:274).

1. *Communities of work* are organised in connection with carrying out collective work tasks. Such communities, for instance a work group, are primarily structured by the formal organisation of the firm, the management hierarchy and the technical/administrative structure. The dynamics ruling such communities of work are the result of market forces and the technological development – plus the efforts of the management to rationalise production and create growth and customer satisfaction. This continuously changes the preconditions for cooperation as well as the nature of the tasks that the community is responsible for.

It is important to emphasise that communities of work do *not* equal formal organisation. Workers standing side by side at the assembly line often do not engage in a community of practice, since they do not directly work together because any cooperation is carried out by technology.

The identity that corresponds to the community of work is first and foremost "employee", that is a participant in a work process in a firm along with a sense of belonging to the business. Normally, the employees also see themselves as important in a societal role. They produce something for others and this is also part of their self-perception.

Learning within the community of work is primarily about becoming more skilled and efficient for doing one's job, and to produce a higher quality and make fewer mistakes according to the collective criteria of the community. The most common view of learning in the workplace is that it is basically a process of adaptation. Learning is to be able to carry out the given tasks, to operate new machinery and to comply with new demands for quality.

However, learning may also be a complementary and creative process for instance by consisting of technical innovations or the development of new organisational procedures.

At the end of the day it is often the productivity rationale that determines what should be perceived as "learning" and what should be perceived as "development of negative attitudes" or "resistance". Precisely because the work is normally organised to fit in with the sheer productivity aspects, the opportunities for learning in a positive sense of the word are often poor. The work is normally laid out with a view to effectively carrying out the given tasks and not to reflecting, exchanging experiences or experimenting. Hence, for the employees learning at work, it is frequently a matter of learning to remain passive, adapting and realising that it is useless to propose any changes.

2. Political communities are established in connection with the struggle over control, power, status and influence in the workplace. Among other things, the political rationale is underlying the organisation of the various professional groups in the workplace. Such communities may be personified by an elected shop steward, and they will be linked to the larger community in the shape of the trade union, the trade or "*us workers*" or "*us blacksmiths*".

Thus, the identity within these communities are determined according to interests as in, for instance, "unskilled worker in company X". Nevertheless, this identity usually transcends the individual workplace, as seen during solidarity strikes for workers belonging to other companies. Viewed within this rationale, the workplace is a power structure with political dynamics (in the broad sense), that springs from the opposition between management and staff, and the struggle between professional groups and departments and the internal rivalry between managers and management groups.

The struggle is for the direct as well as the indirect control of the work process as a "*contested terrain*" (Edwards, 1979). The direct outer control with the work process is increasingly being replaced by the employees' own inner control. Power struggles occur in traditional enterprises with authoritarian management and often take the form of overt physical confrontation involving direct force, firing, transfers, strikes and pickets. Within modern businesses it takes, to a large extent, the form of a struggle over cultural hegemony which is about the loyalty and involvement of the employees.

This may be seen as a struggle for the *power of definition*, the struggle between various interpretations of what goes on in a workplace and in their shared environment. It is the struggle about the importance and meaning of various kinds of work and various professional groups – for instance the status and value of women's work. In this struggle, the management and the various groups of employees draw on different discourses in relation to the changes occurring in the workplace.

Learning as seen in relation to this rationale is, among other things, about learning solidarity and collective conduct, and learning the standards and language of the community. It is also about understanding oneself and one's work as being important and a means for obtaining status – not only in relation to the firm, but also in a larger social context.

3. Cultural communities are created on the basis of a shared culture. Shared values, norms and perceptions link different groups in the workplace. The cultural element is a precondition for an immediate understanding in a work group – based on common language, values, norms and perceptions of the environment and a shared identity. The cultural communities may be understood as *common lifeworlds*, cf. Habermas (Habermas 1981), that is, the implicit background understanding that amounts to a precondition for the establishing of more target rational communities and organisations.

The cultural differences consist of many layers and dimensions. The basic cultural patterns are linked to gender, generation, ethnicity and social background. These characteristics are often connected to the division of work in the workplace, so that certain functions or departments are primarily carried out by, or made up of, women or certain groups of immigrants.

In addition to the cultural characteristics mentioned, which are not specific to the individual workplace, many workplaces have developed special standards and perceptions for a subculture or counter-culture against the dominant business culture. A new employee's learning first and foremost consists of being able to get on within the business culture and the various subcultures of the business.

Besides, culture is increasingly being used as a management tool, among other things in order to amplify the employees' sense of belonging and loyalty to the business. Thus the cultural element works as a means of integration, it creates a sense of community, and yet it is an area of conflict where several (sub-) cultural patterns clash.

The cultural elements both represent continuity by virtue of values and norms that have been handed down, but it is also a resource that the employees may draw upon when they have to deal with the changing conditions of life. Part of this is play, games, myths and stories that form the basis for daydreams, fantasies and cultural counter images that reinterpret the reality in the workplace. When, from time to time, such counter images are linked up to concrete choices of action, they form the basis for learning processes in which the employees themselves become the subject for change.

The three types of communities in the workplace are normally intricately interwoven. Communities of work are often, for instance, characterised by struggles of interest and cultural conflicts – between technicians, administrators, marketing people, HR managers, men, women, older and younger people, etc.

Furthermore, it is important to emphasise that dynamics within these micro-social groupings in the workplace cannot be understood separately from the larger societal context. A great number of analyses of learning in the workplace tend to focus so strongly on the internal processes in the business, that their link to society and the employees' lives outside the workplace are forfeited. An important potential for learning in a subjective perspective is found precisely in the attempt of the employee to create cohesion and meaning in life that transcends the divided contexts which life in a modern society entails. It is the understanding of the subjective perspectives that makes the individual biographies an important element in analysis of workplace learning.

Biography and learning

The introduction of the concept of lifelong learning has focused on the fact that learning both can and should take place throughout a person's life, and that learning should be understood in connection with past experiences of learning in different contexts in life. Lifelong learning is an ambiguous term that, on the one hand, indicates an awareness of the necessity for continuing to educate ourselves in order to be able to fulfil the demands of the labour market in an ever more global society based on knowledge. Hence, lifelong learning becomes an essential feature in continuation of a number of various management and organisation concepts that emphasise the necessity for using the resources of the employees, and education and learning thus become essential tools for achieving this. On the other hand, the concepts open up for an understanding of learning as an attribute that occurs during various practice contexts throughout life. Lifelong learning should therefore be understood and analysed in the context of the biographies that are the foundation for learning and which learning at the same time affects and reshapes.

When applying the perspective of lifelong learning as a concept that views learning as an integral part of a complex pattern where the biography of the individual constitutes the framework, a number of questions of a research-related and methodological nature are raised. The importance of the biography and the experiences of the participants has in certain adult educational contexts become integrated as a natural element in the teaching. It is not so common in vocational and supplementary training though the perspective of experience has attained some rooting. Less established is the understanding in discussions on learning at work, which must principally be seen as attributable to the dominant discourses that basically view learning as a result of changes in the technical/organisational environment. However, some links to working life do exist in the research approaches that centre around biography and the world of common life (Alheit 1995a, Volmerg 1986).

Approaches with focus on the narrative interview have indicated the importance of attaching significance to the biography, which can give the narrators as well as the researcher new knowledge about e.g. learning in concrete practice contexts. The narrator gains an insight into 'unlived lives' – other opportunities for choices in life than those that were made. Alheit proposes the concept "biographicity" as a notion for the opportunity we have for redesigning the contours of the contexts in which we have lived and live our lives. This will establish itself as an experience that we are able to change the contexts of our lives albeit according to certain conditions and balances of structural limits (Alheit 1995b). The approach shares Bourdieu's emphasis on structuring aspects of our lives and the embodied experience in our habitus (Bourdieu 1990). Similarly, the emphasis on opportunities to reach an awareness of limits and options for action reveals parallels to Giddens' perception of actors as reflective and knowledgeable agents (Giddens 1984). Action is dependent on the conscious motives of the actors but just as much on non-acknowledged conditions of action. The non-acknowledged conditions consist, among other things, of subconscious motives that exist alongside a discursive and practical awareness.

The emphasis on the sub- and preconscious is central to that approach to the biographical perspective that draws on basic psychoanalytical perceptions. Lorenzer's critical theory of socialisation (Lorenzer 1972) and Leithäuser's concept of everyday awareness (Leithäuser 1976) make up the major sources of inspiration in this context. They both belong within the critical, theoretical tradition where the subject-object dialectics

constitute the basic understanding for our intercourse with a compound and complex world. The everyday consciousness is the individual's psychological balancing of conflicting experiences that occur in complex patterns of interaction. When shifting the psychoanalytical focus away from a biological set of explanations and moving it towards an emphasis on ways of interacting, the relational aspects become central. To analyses of learning within a biographical perspective it thus becomes of central importance to understand the social relationships that the learner is part of. The relational aspect expresses the ongoing inter-subjective adaptation that the individual engages in when he or she encounters the objective reality.

The encounter between the subjectively, biographically determined dispositions and the objective conditions of reality often become embedded as ambivalence. The opportunities and limits in life are often perceived as a mixed blessing; they are both positively and negatively loaded. If, in the case of an individual, the lion's share consists of limitations on the fulfilment of conscious dreams, the given life situation will be interpreted in an aggressive or resigning manner, yet the interpretation will include also the wish to add the unfulfilled dreams to reality. This may be the case for workers whose ambitions are not met, or if they have a job with only minor professional challenge. Their concrete job will be perceived and described negatively, but at the same time some special properties will usually be maintained that may be ascribed to dreams and experiences of professional skills that act as a central part of the worker's identity.

The development of an identity at work occurs in correlation between the socialisation *to work* within the family, at school and during any vocational training and education, and the socialisation *in work* that takes place after qualifying as part of the vocational career. The vocational identity is a special form of work identity that is typically developed through a combination of vocational training and working in the trade.

Typically, a strong identity may be developed when the vocational training and nature of the subsequent career have given rise to development of work orientations that have been founded in the family or at school. The fast changes entailed in the late modern societies can result in a severing of this continuity. The individual is often met with demands for reorientation both in relation to his or her social background and also midway through his or hers career. The technological development completely erases the basis for certain trades and radically changes the contents of others. One can describe the process as erosion of the vocational identity.

Learning environments and links between work and education

The technical-organisational environment in the workplace can be analysed without regard to how the employees perceive it. Yet such an analysis only conveys information about the objective potential for learning and not about what the employees actually learn. The employee's learning is not dependent on how the workplace appears in the objective analysis carried out by the researcher but on the employee's own perception of the workplace. That is, how the employees see and interpret changes in the workplace and how they link it to their opportunities in light of their socio-cultural background and collective experiences. Hence, learning is dependent on the individual biographies of the employees and on the socio-cultural dynamics of the workplace. Learning is one link in the chain of individual adaptation of past experiences, as well as a link in the collective interpretation and negotiation of opinion that takes place within the communities in the workplace. The learning environment for the employee is being constructed on the basis of his life-story, his professional background, the relations to colleagues and the content and organisation of work. The learning environment is thus established through subjective ascription and the social negotiation of meaning of the changing technical-organisational environments.

In discussions of the connection between learning at work and learning in educational institutions there is a need to understand how the learning environment is constructed in both institutional settings. It is possible to point out several aspects in each learning environment that has to do with the nature of the activity in the institutional setting and which can be seen as the special potential for learning in that specific context. Furthermore the interplay between workrelated training and education and learning and development at work must be analysed as a complex relation involving different policies and rationales at macro-level and different interests and rationales at the micro-level.

On the *macro-level* one can talk about different rationales of economical and educational-pedagogical nature. The economical rationale concerning the link between work and education leads to value-for-money thinking and more narrowly constructed arguments of effects. The rationale will work in the way that it will try to guide the public spending in a direction that seems to be the most efficient. However, the educational-pedagogical rationale will include insights that it isn't easy to predict what educational activities really are the most efficient and economical. The different rationales will work together and against each other in various ways. An economical-efficiency dominated rationale can't totally be dominating a field as training

and education. That both has to do with the nature of the activity and it has to do with the social actors that are involved in field. In training and education there will be actors – from ministry level to practitioners in educational institutions which will defend a view of the importance of education and enlightenment. But presently these actors are being pressed by actors that defend a first of all economical view and therefore the educational-pedagogical rationale behind workrelated training and education is forced back.

Besides the different rationales that on the political-institutional level frame the process one can talk about different rationales or interests connected to the different actors on the *micro-level*. The primary actors are the enterprises, the employees, and the educational institutions. For these actors their actions that are visible in the process will often take the shape of what we with Weber can call goal-rationality. The actors have conscious intentions and goals which for enterprises can be part of a production or management strategy, for the employees it can be to secure or better their job-situation and for the school it can be securing the curriculum or the professional status of the school.

As we have showed in the outlining of a multidisciplinary approach to understand workplace learning it is necessary to search for more than the conscious intentions and goals. In itself such an approach doesn't lead to better opportunities for those who are most threatened by globalisation and rapid market changes: the unskilled and lowly skilled workers. But it can help to create the necessary understanding that learning in the workplace is subject for struggle for influence and meaning. For discussions about links between learning at work and learning in educational institutions it can lead to awareness that links should be established with more emphasis on the employees' wishes. Learning environments can contain seemingly good opportunities for learning, but if they aren't met with subjective motivation of the employees, often learning doesn't occur. For the enterprise that means loss of productivity, for the employees it means less development and satisfaction at work.

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